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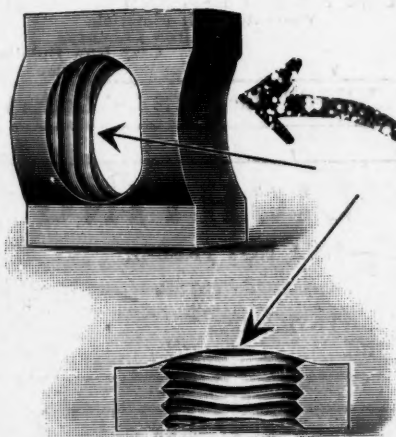
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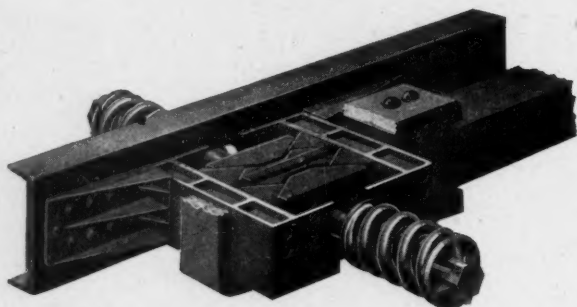


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Railway Age Gazette

Volume 61

October 6, 1916

No. 14

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*Illustrated.

There is one aspect of the recently threatened strike of the four brotherhoods of men in train service that was entirely obvious to the men themselves and to transportation officers, but probably never occurred to the great majority of the outside public who discussed the problems involved. A very large per cent of the enginemen on nearly every road are men past the age limit for new employment in train service. The same is true of conductors. On the other hand, a very large per cent of the firemen are young men with many years to work before they will reach the age limit. Assume for a moment that there had been a strike. The engineman of 48 would have had to face the fact that if he threw up his job and the strike was not a complete success he could never get back into train service. He was past the age at which men for train service are employed on any railroad. The same was true with the conductor. The fireman of 25 or 26 if he threw up his job could get another; men of his age are being employed all the time for train service. The young brakeman, if he lost his present job, would have comparatively little difficulty in getting another of about the same kind. The older enginemen and conductors had comparatively little to gain and everything to lose; the younger firemen and trainmen had something to gain and comparatively little to lose. Were the leaders of the enginemen and conductors playing quite fair with their own brotherhood members when they linked up with the firemen and trainmen?

At a time when grade crossing accidents are the source of ever-increasing expenditures by the railroads to cover the

When the Shoe Pinches the Other Foot

cost of damage suits; of further protection of crossings by grade separation, gates, watchmen, warning devices, lighting, signs, etc.; and unremittant "safety first" campaigns among employees and the public alike; it is refreshing to be reminded that some responsibility rests on the public, and furthermore that the responsibility may be translated into dollars and cents. On June 3 a passenger train on the Chicago & Eastern Illinois

was approaching a crossing in open country near Danville, Ill., at its usual speed. The view was unobstructed and the whistles sounded soon enough for the driver of a vehicle near the crossing to have ample time to stop to let the train pass. A man who was driving an automobile towards the crossing at the time paid no heed to the warnings, it is alleged, and was struck and killed. His automobile derailed and wrecked the locomotive and baggage car and caused injuries to the engineer, which later resulted in his death. Mrs. Charles Everhart, wife of the engineman, has filed suit against Daniels' estate for \$5,000, and W. J. Jackson, receiver for the C. & E. I., has begun suit for \$10,000 to cover the material damage to the train. Should these suits prove successful they will serve as a wholesome deterrent to carelessness by automobile drivers. Disregard of one's personal safety seems to be a common and incurable trait of motorists. Observations by the railroads in California at 34 crossings disclosed the startling fact that out of 17,000 drivers of motor vehicles noted, 69½ per cent looked neither way before crossing tracks, 2.7 per cent looked in one direction only, and but 27.8 per cent looked both ways. Three thousand three hundred drivers observed, ran over the crossings at a reckless rate of speed. The prospect of a considerable monetary loss as the result of careless driving will, it is hoped, cause automobile drivers to stop, look and listen to a more appreciable extent than they have done heretofore.

The present national administration may not have had an express understanding with the labor organizations to help the railway brotherhoods get their "basic eight-hour day," in return for which the labor leaders were to try to deliver to the Democratic party the votes of organized labor. But whether

Trying to "Deliver the Goods"

there was or was not such an understanding, it is a demonstrable fact that for five months both the administration and the labor leaders have been acting just as they would have acted if there had been such an understanding. The evidence on this subject, available up to the end of August, was reviewed in an editorial entitled, "Was There a Political

Frame-Up?" which was published in the *Railway Age Gazette* for September 1. The Adamson law, providing for the "basic eight-hour day," in other words, for the advance in wages, which the railway brotherhoods demanded, was passed on September 2. If there was an understanding, this was the administration's final act in carrying out its part of it. Since then three of the four heads of the brotherhoods—Stone, of the engineers; Lee, of the trainmen, and Garretson, of the conductors—have issued statements through one channel or another in effect, urging their followers to vote for Mr. Wilson; and grand officers of the brotherhoods are going all over the country attending lodge meetings for the purpose of doing likewise. Suppose that the situation had been reversed; that the relations of the administration with the railroads had been what they have been with the brotherhoods, and that President Wilson had promptly espoused the demands of the railroads instead of the demands of the employees and secured the passage of a law for their benefit at the expense of labor and the public. Suppose that after he had thus won a victory—or what was considered a victory—for the railroads, President Holden of the Burlington, and the other members of the railway executives' "committee of eight" had gone about the country urging people to vote for Wilson. What, then, would have been thought and said on the question of whether there was a "political frame-up"? But, of course, evidence which would be presented from every stump in the country by demagogues of the Senator La Follette and Senator Reed type as absolutely conclusive and wholly damning if capital were involved, means nothing at all when organized labor is involved!

EQUIPMENT MARKET AGAIN ACTIVE

THE equipment market has again become active after a period of quiescence during the Summer months. According to our records for the month of September, the railroads of the United States and Canada placed orders for 9,152 freight cars, or almost as many as were ordered in the three preceding months combined. Orders for 243 locomotives were reported for the same month, or five more than were ordered in June, July and August together. With the shortage of cars becoming more serious every day, and with no prospect of an early peace in Europe, it would appear that the carriers are facing the necessity of making extensive orders for new equipment in spite of high prices and poor deliveries. That there has been reason for postponing purchases is evidenced by the fact that prices today are from 50 to 75 per cent higher than 16 months ago. If buying continues to become heavier during the remaining months

ORDERS OF LOCOMOTIVES AND FREIGHT CARS REPORTED IN 1915 AND 1916

	Locomotives		Freight-Cars	
	1916	1915	1916	1915
January	231	31	14,613	3,300
February	272	36	9,323	4,385
March	634	114	14,233	1,188
April	178	20	7,228	1,000
May	248	101	4,154	19,080
June	172	81	3,031	4,464
July	25	32	1,514	8,595
August	41	117	5,041	1,685
September	243	131	9,152	4,135
Total for Nine Months..	2,044	663	68,289	47,832

of the year, the orders for cars in 1916 will largely exceed those for 1915. According to our records, 68,289 freight cars had been ordered in 1916 at the end of September, as compared with 47,832 contracted for during the same period last year, and with 109,792 ordered during the entire year of 1915. There has been a lull in car buying during the major part of the last five months; in fact approximately 66 per cent of the orders recorded thus far were placed in the first third of the year.

Likewise, 64 per cent of the locomotive orders reported

until September 30, were placed in the first four months of this year. Contracts for tractive power have been proportionately larger, however, than orders for cars, as 2,044 engines were ordered in the first nine months of this year, nearly 400 more than were ordered in the entire year of 1915.

The need for locomotives is not as pressing as the need for cars, and it is likely that the carriers will make proportionately heavier purchases in the latter type of equipment during the remainder of the year. Unfortunately, orders for freight cars placed now will not affect the critical car situation the country is at present facing. According to leading car builders, cars ordered now cannot be completed before some time in the second quarter of 1917, if that early. The orders now on the books of the United States Steel Corporation will keep its mills busy for the next seven months, and it is said other steel companies are in a similar condition. It is very unlikely that car manufacturers will be able to fill new orders any sooner than they have filled those placed so far this year and in the latter part of 1915. Cars are now being delivered by builders which were ordered in December, January, February and March, and some equipment ordered eleven months ago is just now reaching the railroads.

THE ADAMSON LAW SHOULD BE REPEALED

IT is admitted on all hands that the effects which will be produced by the establishment of an eight-hour basic day in railway train service should be investigated by some public tribunal. There is, however, a difference of opinion as to whether the investigation should precede or follow the establishment of the eight-hour basic day. There is also a difference of opinion as to the particular phases of the subject to which the investigation should relate.

The Adamson law, after fixing eight hours as the basis for reckoning compensation, provides: "That the President shall appoint a commission of three, which shall observe the operation and effects of the institution of the eight-hour standard workday as above defined and the facts and conditions affecting the relations between such common carriers and employees during a period of not less than six months nor more than nine months." It is commonly assumed that the main thing which this commission is to ascertain is whether the railways can stand the advance in wages given the train service employees without any advance in their freight and passenger rates.

From the standpoint of the labor brotherhoods this may be the one subject which should be investigated. From the standpoint of the other 80 per cent of railway employees, of the stockholders of the railways, of the traveling and shipping public, and of the people of the United States, this is not the subject which most requires investigation. Even if it should be demonstrated that the railways, with their present rates, could stand the increase in pay voted to the train service employees by Congress and President Wilson, this would not prove that the enactment of the Adamson law was justified or that the results produced by it were satisfactory. If it should be demonstrated that the railways could stand additional regulation tending to reduce their net earnings this would not settle, but would merely raise, the question as to whom such regulation should be adopted to benefit.

A real and thorough investigation of the entire situation might conceivably show that an additional burden in the form of higher wages for the train service employees could be borne by the railways. But it might show that the wages of the train service employees are too high already, and that any increase in wages made should go to the section foremen, the general office clerks, the station agents and other employees of the railways constituting that 80 per cent of

the total number whose existence the Adamson law ignores.

Again, a real and thorough investigation might show that no class of railway employees is entitled to an increase in wages, but that some railway rates ought to be reduced. Finally, such an investigation might show that, in spite of the present large net earnings, the average return earned by the railway companies from year to year on the investment in their properties is too small, and that it is the stockholders rather than either employees, or shippers and travelers who are entitled to more consideration from the regulating authorities.

The one conclusion suggested in the foregoing which it is least likely that a fair and thorough investigation would lead to is that the train service employees are entitled to an increase in their wages. Their maximum and minimum, and their average wages have been presented in these columns repeatedly. Their average wage is almost twice as great as the average wage of the remaining 80 per cent of railway employees. And yet the one change in the situation which a thorough investigation would be least likely to show to be fair and desirable is the one change which the Adamson law provides shall be made without any investigation whatever. This illustrates the essential vice of the policy for which President Wilson stands—that of acting first and investigating afterwards. Once a wrong step is taken it is hard to retrace, and is more likely to be followed by more false steps. If the Adamson law does go into effect it will be difficult to restore wages to the old basis even though the law is subsequently held unconstitutional by the courts.

These being the facts, it is evident that the business interests of the country, instead of leaving the Adamson law

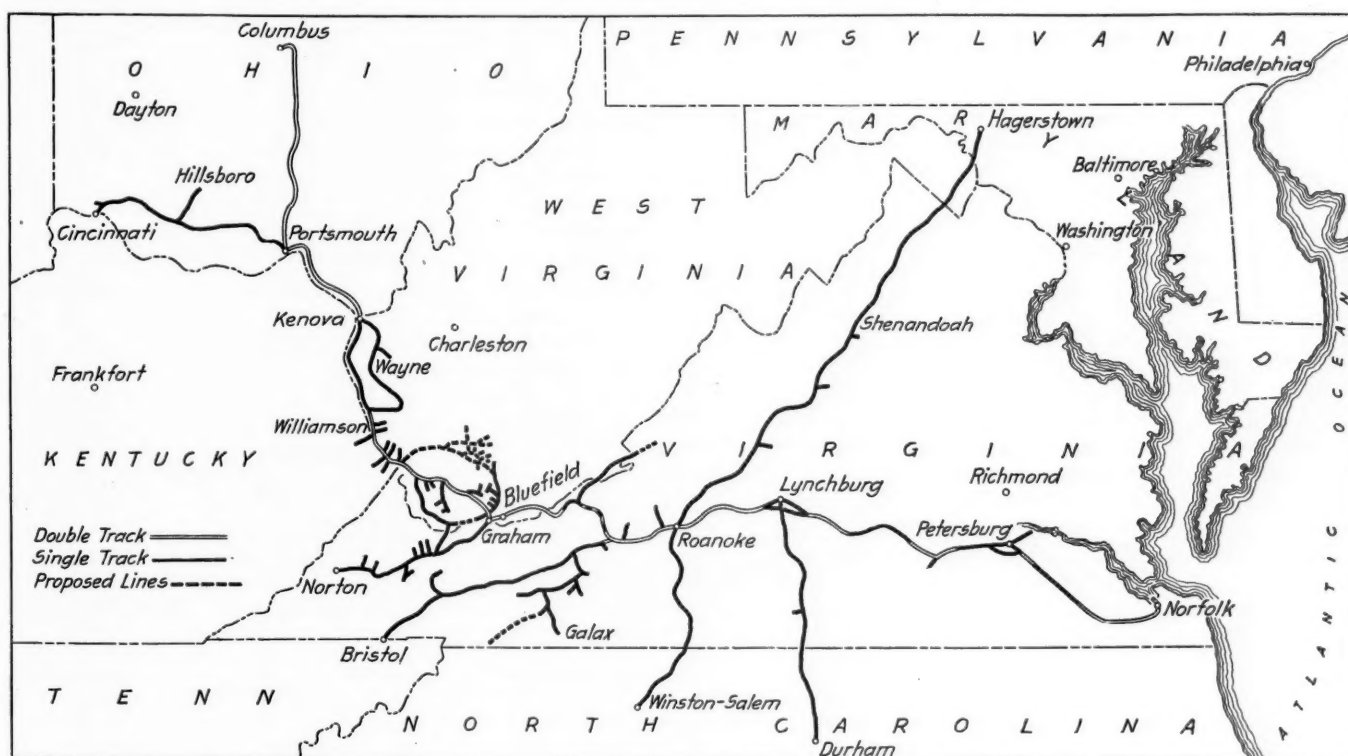
Court, which, at the best, would expose that tribunal to harsh and unjust criticism.

Even though the Supreme Court should declare the law invalid this would merely establish a precedent for the courts and not for the lawmaking bodies, and court precedents are often nullified not only by subsequent court decisions but also by constitutional amendments. The thing needed in this instance is not merely for the courts to protect the public from an unjust and probably unconstitutional law, but for the American public through its lawmakers to wipe out the blot upon American history and repair the damage to American institutions and to the welfare of the American public caused by the passage under the most infamous circumstances of this outrageous statute.

The Adamson law should be repealed and then there should be made a real and thorough investigation of the entire railway wage situation, such as that suggested by the Chamber of Commerce of the United States in the resolution which it presented to President Wilson and Congress long before the strike crisis ever came. Only in this way can justice be done to all concerned and their self-respect be restored to the American people.

NORFOLK & WESTERN

ON an average, the Norfolk & Western hauls each ton of freight a little further than from Roanoke, Va., to Norfolk, 257 miles. For this service it gets a total of \$1.12, out of which must be paid not only all of the expense of the movement of the ton of freight, the proportionate cost of repairs of cars, locomotives, track, buildings, overhead, interest on the investment and profit to



The Norfolk & Western

to be dealt with by the courts, should start a movement at once for its repeal. The duty of disposing of such legislation ought not to be passed up to the courts. A measure so manifestly unjust and whose passage was secured in the way that it was, is a disgrace to the American nation, and should be removed from the statute books in the same way that it was placed on them, not by a decision of the Supreme

stockholders, but also a certain proportion of the overhead, interest charges, etc., which are properly assignable to passenger service. When you stop to figure out in detail what expenses must come out of this \$1.12, it seems nothing short of marvelous that the Norfolk & Western is one of the most profitable railroad properties in the United States. A few extra switching movements of each freight car, a few

days' delay—either one would turn profitable operation into unprofitable operation. An oversupply of expensive facilities might easily eat up in interest charges nearly all of the profits. Where a railroad has a ton-mile rate of 4.2 mills, as the Norfolk & Western has, niceness of adjustment between facilities and requirements must approach perfection.

In the fiscal year ended June 30, 1915, the Norfolk & Western, operating 2,059 miles of road, with a 4.2 ton-mile rate and a ratio of operating expenses to operating revenues of 56.16 per cent, earned \$23,055,000 net after the payment of expenses and taxes. After the payment of interest charges and rentals there was \$20,625,000 (which includes \$2,127,000 non-operating income) available for dividends. After the payment of regular 4 per cent dividends on the \$23,000,000 preferred there was therefore earned 16.7 per cent on the \$118,000,000 common stock.

Great prosperity has come to the Norfolk & Western only in the last few years. In 1905 the company was paying only 3 per cent on its common stock. In the following year this was raised to 4 per cent. What might be called the fundamental factor in the success of the management of the Norfolk & Western has been the adjustment of the provision of additional facilities to meet increased business, on the one hand, and the relationship between the securities issued to raise new capital and the expenditure for additions and betterments, on the other hand. Binding these two together and permeating the whole structure is a sureness of operating methods that amounts to genius.

Some years ago it became obvious that the Norfolk & Western would have to carry on a very extensive program of additions and betterments to its property if it was to get its share of the steadily increasing output of the West Virginia coal mines and to handle increased traffic at the same or lower operating ratio in the face of increases in rates of pay and of prices of materials. It is easy enough now to look back and say that the course adopted some years ago was obviously the correct course. It has proved to be the correct course, there is no doubt of that, but it was not probably so obvious at the time it was adopted as it appears to be now. The Norfolk & Western management decided that the primary requisites for the development of the property were terminals always in advance of the needs, yards ample enough to guarantee freedom from congestion at division terminals, and adequate power. In the particular circumstances confronting the Norfolk & Western it was thought that improvement of main line, reduction of grades and replacement of lighter rail with heavier sections should follow, not precede, terminal development. It was recognized that congestion, with a ton-mile rate of in the neighborhood of four mills, would be fatal to profitable operation. The coal pier at Norfolk, the immense terminal yard there, the very ample yards which have been built at all division points, the large expenditures which have been made for additional locomotives and, of great importance, the quite unusually ample facilities for repairs and construction of equipment at Roanoke, have all been a part of the successful guarding against congestion.

Since October 1, 1896, \$146,497,000 has been spent on the Norfolk & Western's 2,000 miles of railroad for additions and betterments, and of this amount \$41,546,000 has been stockholders' money, against which no securities were issued. The financing of the other \$105,000,000 was far-sighted and proved to be very successful. Much of it was done through the issue of convertible bonds which the results obtained from operation made it profitable for the purchasers to convert into stock.

When the heavy movement of freight began in 1915 the Norfolk & Western management had a machine and an organization which was ready to take care of each increase in business with precision. The total number of revenue tons carried by the Norfolk & Western in 1916 was 44,-

373,000, an increase over 1915 of 11,606,000 tons, or 35.42 per cent. The average length of haul was 266 miles as against 272 miles in 1915, so that the increase in ton mileage was approximately 32 per cent. The average receipts per ton per mile were 4.2 mills in 1916 and 4.1 mills in 1915. The great bulk of the increase in freight business was from the movement of bituminous coal and of manufactures. There was also some improvement in the lumber business. The total tonnage of bituminous coal carried in 1916 was 30,269,000, or 6,989,000 tons more than in 1915. The total tonnage of ore was 1,194,000 in 1916, or nearly double that of 1915. The tonnage of manufactures was 5,172,000 in 1916 as against 3,118,000 in 1915. The increase in ore tonnage helped to eliminate empty car mileage and thus automatically increase the average revenue trainload, and combined with this was a great number of factors, each one not very large in itself but, when combined, bulking very large, which made it possible to increase the average revenue trainload by 116 tons, the average in 1916 being 957 tons. The increase in tonnage per freight engine mile was even greater proportionately. The average in 1916 was 669 tons, or 16.87 per cent greater than in 1915.

The table below shows principal figures for 1916 and 1915:

	1916	1915
Average mileage operated.....	2,059	2,042
Freight revenue	\$49,559,140	\$36,550,550
Passenger revenue	5,796,583	4,739,538
Total operating revenues	57,304,586	42,987,044
Maintenance of way and structures	6,571,329	5,738,074
Maintenance of equipment.....	10,046,263	8,342,419
Traffic expenses	703,055	699,827
Transportation expenses	14,135,112	12,521,665
General expenses	891,631	836,607
Total operating expenses	32,181,346	27,831,815
Taxes	2,065,000	1,878,000
Operating income	23,054,786	13,275,462
Gross income	25,181,364	15,318,696
Net income	20,624,059	10,409,905
Dividends	9,232,636	7,396,293
Surplus	11,391,423	3,013,612

CHICAGO, MILWAUKEE & ST. PAUL

THE St. Paul has passed the one hundred million mark in gross earnings for the first time. With the largest wheat crop in its history, added to the great revival in general business, phenomenally large movement of ore, together with considerable improvement in passenger business, the Chicago, Milwaukee & St. Paul earned \$105,646,000 in the fiscal year ended June 30, 1916. This is an increase over the previous year of \$14,014,000 and the management saved for net approximately half of this increase. The operating ratio in 1916 was 65.43 per cent, comparing with 67.78 per cent in 1915. The following table shows the percentage of each class of operating expenses to total operating revenue:

	1916.	1915.
Maintenance of way and structures.....	10.95	11.35
Maintenance of equipment.....	15.63	15.03
Traffic expenses	1.80	1.92
Transportation expenses	35.71	39.04
Miscellaneous expenses.....	0.70	0.79
General expenses	1.82	2.04
Transportation for investment—Cr.....	1.18	2.39
Total operating expenses.....	65.43	67.78

In the unprosperous year ended June 30, 1915, the St. Paul continued to its standard in maintenance of way expenses, even when so doing necessitated the showing of part of the dividends on the common stock paid from surplus. There was, therefore, in the 1916 fiscal year no deferred maintenance of way. The total expenditures for maintenance of way in 1916 were \$11,564,000, comparing with \$10,377,000. In part the larger amount spent in 1916 was directly necessitated by the greater movement of traffic and in part it was due to charges for maintenance work in connection with additions and betterments. There was \$1,179,000 spent for new additional main line tracks and reducing grades and perfecting line, and \$9,309,000 for other additions and betterments to roadway and track, of which the electrification expenditures on the Rocky Moun-

tain division bulked largest, with \$3,870,000, and bridge, trestle and culvert renewal and elimination next, with \$962,000.

The largest increase in maintenance of way expenditures in 1916 was for track laying and surfacing, which cost \$3,571,000, or \$728,000 more than in 1915. It is rather interesting to note that the expenditures for ties and for rails was slightly less in 1916 than in 1915. Rates for track laborers were in many instances much higher in 1916 than in 1915, which would in part account for the large increase in the item track laying and surfacing; but since this is in good part the labor cost of putting rails, ties and ballast into track, the large increase in this item as compared with slight decreases in rail and tie accounts, and notwithstanding an increase from \$147,000 to \$294,000 in ballast account, can hardly be accounted for entirely by the difference in rates paid track labor.

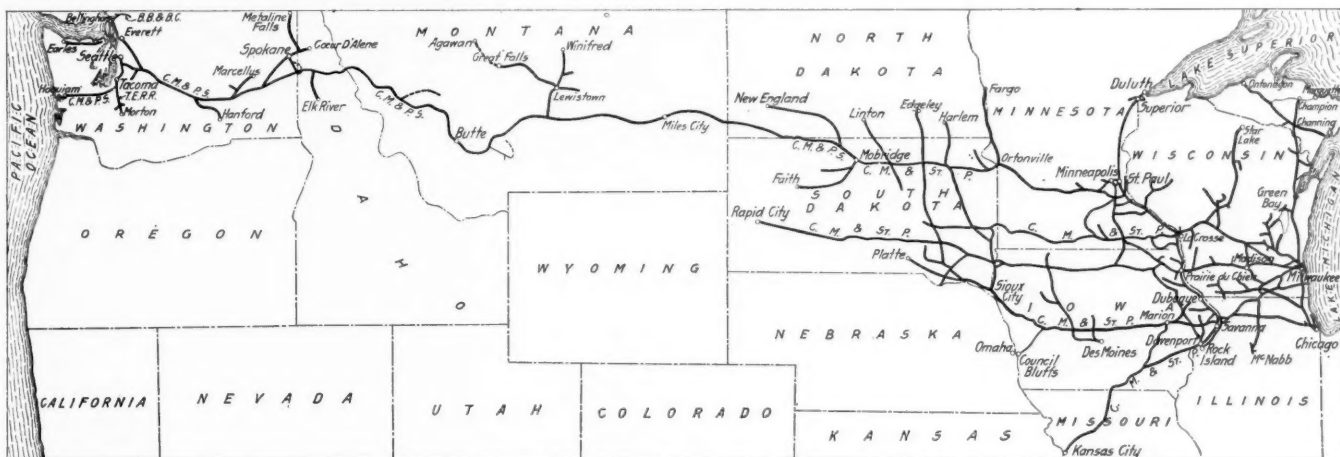
With the unprecedentedly heavy movement of wheat it was to be expected that repairs of freight cars would show a large increase. Total maintenance of equipment expenditures amounted to \$16,518,000, or an increase over the previous year of \$2,781,000. Of this increase repairs of freight cars accounted for \$1,088,000, the total spent on this account in 1916 being \$6,130,000. The greater part of the remainder of the increase in maintenance of equipment expenditures is accounted for by an increase in cost of repairs

in passenger mileage was accompanied by an increase of 3 per cent in the mileage made by passenger trains.

In 1916 the Chicago, Milwaukee & St. Paul earned \$16,717,000 net available for dividends. The regular 7 per cent dividends on the preferred called for \$8,109,206, leaving \$8,607,794, or a little over 7.3 per cent on the common stock. The amount paid in dividends was 4½ per cent, the annual rate being raised in January, 1916, from 4 per cent to 5 per cent.

During the year the St. Paul converted the outstanding \$30,568,000 European loan of 1910 into a like amount of 4 per cent gold bonds, due 1925. During the year there was \$8,556,000 additional general and refunding mortgage bonds issued and held in the treasury. There are now in the treasury \$25,000,000 general and refunding mortgage bonds which are available for such corporate purposes as the board of directors may authorize, and in addition \$107,259,000 general and refunding mortgage bonds for acquisition of additional property or other additions and betterments. At the end of the year the company had \$12,636,000 cash, with no loans and bills payable.

It is, of course, unlikely that there will be another such wheat crop as that of 1915 in the present generation; but in that year the corn crop in a large part of the territory served by the St. Paul was a partial failure. Present indications are that the wheat crop in St. Paul territory will be



The Chicago, Milwaukee & St. Paul

of steam locomotives of \$698,000, the total on this account in 1916 being \$5,809,000, and by an increase of \$303,000 in repairs of passenger cars, the total on this account in 1916 being \$1,362,000.

Transportation expenses were held down remarkably well. The total in 1916 was \$37,729,000, an increase of \$2,031,000, or 5.7 per cent. The increase in revenue ton mileage was 22.69 per cent and in revenue passenger mileage, 4.82 per cent. Increased trainload was an obviously important factor in holding down transportation expenses and was helped by a better balanced traffic, by the electrical operation of part of the Rocky Mountain division, and by a large number of detailed improvements in operation and in supervision. The average revenue trainload in 1916 was 425 tons as against 390 tons in 1915. The average number of loaded freight cars per train was 23.663 in 1916 and 23.179 in 1915. The average number of empty cars per train was 9.517 in 1916 and 10.138 in 1915. The length of haul increased, the average in 1916 being 262 miles and in 1915, 248. The average loading per loaded car was 20.459 tons in 1916 and 19.795 tons in 1915. The average ton-mile rate was 7.571 mills in 1916 and 7.813 mills in 1915.

The total number of passengers carried one mile in 1916 was 899,872,000, comparing with 858,452,000 in 1915. The increase of 4.82 per cent in passenger business measured

below normal, measured in bushels per acre, but in Montana especially a greater acreage each year is being brought under cultivation. The prospects are for a very much better corn crop than last year, and while it is only guesswork to say how much of last year's wheat has been held back by the farmers, it is a known fact that there is a large quantity of it along the lines of the St. Paul. With the abnormally high prices for both wheat and other grain, the fiscal year 1916 and the coming year will go a long way to permanently raising the standard of living and prosperity in the territory served by the St. Paul, especially in South Dakota and Montana. This is a permanent factor making for higher earnings for the railroad company.

The table below shows principal figures for 1916 and 1915:

	1916.	1915.
Average mileage operated.....	10,130	10,053
Freight revenue	\$76,036,097	\$63,953,799
Passenger revenue	18,923,893	17,952,428
Total operating revenues.....	105,646,484	91,435,374
Maintenance of way and structures.....	11,563,769	10,377,185
Maintenance of equipment.....	16,518,476	13,737,535
Traffic expenses	1,899,027	1,756,801
Transportation expenses	37,728,571	35,697,961
General expenses	1,920,467	1,862,939
Total operating expenses.....	69,120,958	61,971,701
Taxes	5,264,331	4,746,721
Operating income	31,261,195	24,716,952
Gross income	34,620,640	28,366,665
Net income	16,717,357	11,968,283
Dividends	13,391,478	13,951,711
Surplus	3,325,879	*1,983,428

*Deficit.

WABASH PITTSBURGH TERMINAL

THE Wabash Pittsburgh Terminal and the West Side Belt together operate only 86 miles of line, of which only four miles is double track. But the company's operations (the Wabash Pittsburgh Terminal and West Side Belt figures are combined in the annual report) are more generally interesting than the size of the property would indicate, because of the ruinous loss which investors in the company's securities have suffered. Plans are now under way for the reorganization of the company; these plans were discussed in the *Railway Age Gazette* of July 23, 1915, page 146.

In the fiscal year ended June 30, 1916, the Wabash Pittsburgh Terminal and the West Side Belt were operated by the receiver. For the first time in the history of the property there was a substantial surplus after interest charges on receiver's indebtedness. No interest has been earned on the \$30,000,000 first mortgage bonds of the bankrupt company.

Total operating revenues in 1916 amounted to \$1,731,000, compared with \$1,186,000 in 1915. Operating expenses amounted to \$1,023,000, comparing with \$875,000 in 1915. It will be seen, therefore, that the operating ratio was reduced from 73.78 per cent in 1915 to 59.10 per cent in 1916. After the payment of interest on receiver's certificates there was a surplus in 1916, of \$378,000. The best previous year since 1908 was 1910, with a surplus of \$69,999. In 1915 the deficit was \$73,000.

The largest increase in income in 1916 was from the carriage of general freight. The income from this source was \$616,000 as against \$362,000 in 1915. The revenue from coal freight in 1916 was \$763,000 as against \$548,000 in 1915. The average revenue per ton per mile for all freight was 1.127 cents in 1916 as against 1.002 cents in 1915, an increase of 12.48 per cent, accounted for by the larger proportion of general freight as compared with the coal carried.

Notwithstanding the smaller proportion of coal traffic, however, the average revenue trainload in 1916 was 750 tons as against 665 tons in 1915, an increase in trainloading of 12.88 per cent. In large part this was accounted for by a greater proportion of loaded freight car miles as compared with total freight car miles. The average number of loaded cars per train in 1916 was 20.49; in 1915, 18.47, an increase of 10.94 per cent. The number of empty cars per train in 1916 was 9.12 and in 1915, 10.75, a decrease of 15.17 per cent. The surplus in 1916 would amount to 7 per cent on only a little over \$5,000,000. For the greater part of the fiscal year ended June 30, 1916, the Pittsburgh district was extraordinarily busy, so that the results obtained are probably as favorable as the new company can expect to attain immediately. On the other hand, the ability of the organization to hold down the operating ratio to below 60 is very encouraging. In addition the new company expects to develop sources of traffic which were not contributing to the road in 1916. Since the density of revenue freight (ton miles per mile of road) was 1,572,000 in 1916, there is still a chance for at least double the amount of freight business which is now being handled on the single-track line to be handled economically without double tracking.

The table below shows principal figures for 1916 and 1915:

	1916	1915
Mileage operated	86	86
General freight revenue	\$615,634	\$362,286
Ore freight revenue	144,216	92,172
Coal freight revenue	763,363	548,417
Passenger revenue	117,614	109,517
Total operating revenues	1,731,192	1,185,697
Maintenance of way and structures ..	212,597	157,263
Maintenance of equipment	214,302	218,447
Traffic expenses	35,993	33,958
Transportation expenses	465,988	375,710
General expenses	78,728	77,052
Total operating expenses	1,023,096	874,808
Taxes	93,600	93,600
Operating income	614,122	217,286
Gross income	722,320	301,563
Net income	377,847	*73,193

*Deficit.

Letters to the Editor

WEIGHT OF STEEL PASSENGER COACHES

SAN FRANCISCO, Cal.

TO THE EDITOR OF THE RAILWAY AGE GAZETTE:

In the *Railway Age Gazette* of Friday, June 16, page 1356, you have an article on the weight of steel passenger cars, in which it is stated that the lead, from the standpoint of low deadhead weight per passenger of steel coaches, is retained by the Pennsylvania Railroad with a figure of 1364 lb. per passenger.

The majority of the steel coaches owned by the Southern Pacific Company, Pacific System, run below this figure. Out of a total of 308 main line coaches, 218 have a dead weight per passenger running from 1203 lb. to 1353 lb. The balance of 90 steel coaches run between 1371 lb. and 1500 lb. per person, or an average for the lot of 1428 lb. dead weight per passenger. The average dead weight per passenger for the entire number of all-steel coaches owned by this company is 1318 lb.

All these cars have four-wheel trucks, are equipped with double sash and have a seating capacity of 72 persons. The first all-steel coach in service on this line was built in September, 1906, and the latest in January, 1915.

On our electric suburban lines, operating in Oakland, Alameda and Berkeley, we have electric motor coaches seating 116 persons, with a dead weight per person of 943 lb., and electric trailer coaches (which are not equipped with motors), also of 116 seating capacity, with a dead weight per passenger of 579 lb., an extremely low figure.

T. W. HEINTZELMAN,

General Superintendent Motive Power, Southern Pacific Company.

IMPORTANCE OF POLITENESS ON TRAINS AND AT STATIONS

BOSTON.

TO THE EDITOR OF THE RAILWAY AGE GAZETTE:

The highbrow stuff that you and the Western Pacific are setting before your readers (August 11, p. 219) surely gives evidence that the world do move. And why not? Graciousness on the part of all men in the train service would be one of the most reasonable things in the world; and if only the W. P. follows up its good words with good practice; and if a few other roads will copy this far western idea—Boston is not jealous—why, there is no limit to the improvement that might be made. Indeed, we ought to be ashamed of ourselves that we have allowed Pullman porters, and even the proprietors of peanut stands—where the competition between the stands is active—to outdo us in suavity. Another *if* must be added; *if* you will give publicity to the work of those roads which really practise politeness. Very little visible progress has been made in real all-around politeness except as some fellow with native gifts in this direction has got into a prominent place as passenger conductor or passenger trainman, and others, consciously or unconsciously, have followed the example thus set. It is the duty of the *Railway Age Gazette* to magnify the virtues of such conductors and brakemen.

Even with politeness in good measure on passenger trains, we haven't attained such a very high level. The Western Pacific book enjoins politeness to fellow employees. How many freight trainmen have got within hailing distance of that ideal? How many men, either passenger or freight, can be classed as well-behaved everywhere? Men who are quite civil to passengers will drop into profanity within five

seconds after the last passenger is out of hearing; and as for freight trains, one is frequently led to ask if we are not still living in the old days of go-as-you-please, when profanity and obscenity were the stock conversation on every local freight. It would be interesting to know what percentage of the trainmen on any given road or division frequent the Young Men's Christian Association rooms at either terminal; and, of those who do avail themselves of the privileges of this institution, what percentage really open their souls to the elevating influences supposed to prevail there? In short, the Western Pacific standard, in enjoining graciousness and a spirit of friendly accommodation, is calling for men who shall be high quality clear through.

And now, lest your readers may think that I am only another highbrow, bobbing up simply for the purpose of keeping you company, I want to commend the W. P. for the good old-fashioned instructive matter in its book. (I have seen a copy of it.) "Short, curt replies give offense," I read in that courtesy rule. That is practical and far enough removed from the spirit of the dilettante. If the rule before referred to (graciousness) is weak because of its softness, no such charge can lie against this one. I should like to see a stiff reprimand addressed to every employee offending against this precept. And for the third offense I would impose something more than a reprimand. Some ticket sellers who are always correct with their figures and immaculate as regard collar and necktie will give short, curt answers for no other purpose than to show passengers their ignorance—information which it is not the function of the ticket seller to give.

In discussing these matters in committee or on paper, we seem to forget that the problem is one of very large proportions. It is a fine thing for a superintendent to publish a letter commending some brakeman or porter for a special act of kindness or consideration, but isn't this liable to blind us to the conditions relative to hundreds of other men? Of these other hundreds some have disposition, but have not had the opportunity to do the brave or tactful act that elicits commendation; others show a decided lack of the disposition; others, and probably the far larger part, are of indifferent quality; cannot be classified as either good or bad.

Why cannot there be arranged some plan to recognize in a material way all positive improvement in treating the public with courtesy and consideration? If we cannot do this it is a duty to stir up the men in some other way! Commending meritorious conduct is desirable; but condemning the faulty is a duty. It is a duty even when the only outward reward is to have people call you grouchy.

Perhaps we have practised gentleness and indirection too long already. Let us jump in and punish "curt answers" as they deserve. In your reference to the affable ticket seller you have touched a fundamental truth—though many railroad men will say that you are too free in encouraging the "sissy." Never mind such critics. Men of ordinary gifts and attainments—a class which takes in nearly all of us—ought constantly to imitate the polite and courteous ticket-seller or trainman. There is no easier or better way to learn. It is quite natural *not* to like to learn from the too-smooth trainman, for such fellows often have other qualities which, to the average trainman or station man, are in some degree offensive, but this dislike is no excuse for refusing to learn efficiency. To learn salutary lessons it is often necessary to put aside naturalness. It is the trainmaster's duty to drill his men, in such degree as may be necessary to become unnatural.

Drilling men in their duties must not be neglected because it is irksome. Exhorting in a general way to good actions is not the whole thing. It is necessary to continue the condemnation of the bad—as the gardener must leave his flowers and kill weeds. A curt tone, even, will turn the passenger's mind the wrong way. "The spirit of friendly accommodation" (required by the Western Pacific) is the es-

sence of this rule. It would be a highly profitable thing, on any railroad, if some way could be devised to award premiums for excellent attainment in "the spirit of friendly accommodation."

F. R. GEER.

FROM A RAILWAY EXECUTIVE

NEW YORK, N. Y.

TO THE EDITOR OF THE RAILWAY AGE GAZETTE:

Your paper is far from being an "organ of the railways." As you went so far as to notice that silly accusation in your issue of September 22 (page 484), let me add a little testimony.

No paper has been more vigorous in denouncing bad financial methods. And as you write, as a rule, with real information and sound judgment on such matters, your criticisms carry great weight.

In labor and safety movements, your paper and its predecessors have been independent, often taking sides against the railway managers. For years the *Gazette* took a strong stand on safety appliance matters. The late Mr. Boardman once refused to include safety appliances as a part of the growing cost of railway operations, saying to me, in substance: "I'm not going to give you any credit for changes that you ought to have made on your own volition, but actually made only when kicked into doing so by Congressional enactment."

No, Mr. Editor, the *Railway Age Gazette* is far from being an "organ" or "mouthpiece," but is a model of wide information in its special line, employed by it with sense and courage and without truckling to anybody.

OBSERVER.

"TIMES ARE ROTTEN RIPE FOR A CHANGE"

KANSAS CITY, MO.

TO THE EDITOR OF THE RAILWAY AGE GAZETTE.

The old saying "Times are rotten ripe for a change" can be used with emphasis today in regard to the situation of the railroads with respect to organized labor. Everyone who has had to deal with the brotherhood officers knows that they were bluffing in this case. They admitted at the outset that they were not seeking an eight-hour day. The fact that they so readily agreed to the Adamson bill proves conclusively that the length of the day had nothing to do with it. It was the same old game to get something for nothing.

It should be remembered that the men in train service do not work by the day. Practically speaking, they are contractors. They contract to move a train or cargo a given distance for a given price, and like all other contractors they want to get in all the hours or miles, and particularly miles, that they can. There are passenger runs all over the country where two crews are assigned on the assumption that each crew can make a trip one way each day, and where, at the request of the men, they are permitted to make the entire round trip in one day, consuming from ten to twelve hours, the men thus working only every other day.

The present agitation should not be allowed to subside until we have wiped out forever the innumerable arbitrary allowances which serve to hold the railroads up and act as stumbling blocks in the way of discipline and efficient operation. If the facts are honestly and efficiently investigated, the railroads and the public will have all to gain and nothing to lose; though the railroads will come in for some deserved criticism for the manner in which they have allowed the brotherhoods to obtain concessions, one at a time, with individual roads, which they then used as precedents in making demands on the other roads for similar concessions; they have worked custom and precedent to a finish when it fitted their case.

After the last settlement was made with the Western trainmen a few years ago, the men made no particular secret of

the fact that they intended to make no further direct demands for increases, but would, thereafter, devote their activities to obtaining increases through state and federal legislation or demands for so-called better working conditions. In other words, they would mask the real issue. They realized that the bare figures would not stand the test of public scrutiny. They know that people generally now have a pretty good idea as to the ability required to fill the four different positions—that a very little preparation or apprentice work is necessary. A merchant gets his eyes open when the boy on his delivery wagon, whom he paid \$30 or \$40 a month gets a position on the railroad as brakeman or fireman and goes to work at full pay, after making only three or four trips as student; and who comes into the store a few months later with a pay check to cash, bearing figures two or three times the salary which he had received from the store. This merchant, and the farmer also, have found out that in addition to there being no great secret in the work in any of the four crafts, the hazard, through modern safety appliances, has been so greatly reduced, that these men are subjected to less danger than the operatives in most factories.

The actual physical and mental labor involved outside of the physical energy required on the part of the fireman on some runs, is light, and even the fireman seldom has two heavy days in succession.

The word brakeman is now a misnomer. This so-called brakeman is no longer required to ride out on top of his train. To more fully appreciate the falsity of the claims that the brotherhood leaders make with tears in their eyes as to the great physical and mental strain imposed on the men in train service, all one needs to do is to ride an engine or caboose a few trips. A large percent of the men in the brotherhoods are very illiterate; they are led by their officers, and the officer must be doing something to hold his job. These officers are politicians; they are not sincerely interested in the workingman, and in many ways have proved themselves to be traitors to society and to their country. They have justified themselves in any move they felt they could force through in order to secure something more for their brotherhoods. They have constantly practiced the sympathetic kind of deception that enabled Garretson to flood his face with tears and choke with sobs in the halls of Congress, while the bill was being put through.

Let us make a few comparisons as to wages. Take the boy referred to from the grocery store. On account of his inexperience he is put on a work train as brakeman or fireman where he has very little to do. This crew, let us say, handles a pile driver. The function of this work train crew is simply to place the pile driver in proper place for driving the pile, and move to and from the side track to let trains pass. The crew, as per contract, consists of an engineer, fireman, conductor and two brakemen. The most the brakeman has to do, as a rule, is to station himself about a half mile out, with a flag, to notify approaching trains. The conductor and engineer are responsible for keeping clear of certain first class trains.

In order to be at the point of work by 7 a. m. the train crew is called for, say, 6 a. m. and when the bridge gang in charge of pile driver works until 6 p. m., it is usually from 6:30 to 7 p. m. when the work train men get into the station and tie up. They are on the side track and idle during the dinner hour, but are paid for the hour just the same. At the present rate the brakeman and fireman draw about a hundred dollars a month. In the above case, 6 a. m. till 6:30 p. m. makes a full day of ten hours and three hours overtime. The conductor's salary is upwards of \$150 and the engineer's \$175 to \$200. The second brakeman is not needed, and not a man on the crew has enough to do to keep him awake; yet the brakemen and firemen now draw more than the foreman of the bridge gang, who must necessarily be a man of years of experience and ability to direct forces

of 12 to 20 men in the important work of bridge building. His salary is from \$90 to \$100 a month. The coming increase will give the brakemen and firemen upwards of \$125, a salary equal to that of the roadmaster of the division; while the engineer and conductor will draw more than the master mechanic or the trainmaster, who are in charge of the trainmen and enginemen of the entire division, and who are on duty practically all the time.

The trainmen and enginemen on the preferred through freight runs and on local freight trains will draw still larger salaries. It should be remembered here that in the work train service, on account of the light work, the basic day until only a few years ago, was twelve hours. It was made ten on pressure of the brotherhoods.

Certain it is the other 80 per cent of railroad operatives will have to have a big advance if the increase granted the trainmen stands. Even the superintendent, who is termed the general manager of the division, usually 400 to 600 miles of road, may come in for an increase later, when a large per cent of his engineers will draw more salary than he does.

I don't like to criticize the perplexed railroad executives, but I do here suggest that they cause to be tabulated a list of the various arbitrary allowances, that adversely affect operation and expenses. These will be found on all the railroads in the United States. Make a study of them; not only as to how they directly affect the treasury, but how they tie the hands of the superintendents, trainmasters, master mechanics and the other local officers—the men who finally run the railroad. And don't allow to be overlooked the innocent looking rule that provides that before one of these men is suspended or taken out of service, he must be given a formal trial with witnesses. Also, have a local officer explain how the brotherhoods work it to force him often to pass over gross infractions of rules and even insubordination. Consider the rule that prevents the double heading of engines over the division, and requires them to be run as an extra train, simply to give a conductor a job; the rule that requires a car repairer or inspector to follow up a brakeman and couple and uncouple the air hose for him; the special ruling, called the Chicago agreement, which provides that trainmen in through freight service are automatically released on arrival at any recognized terminal; and a hundred others which make it possible to greatly retard efficiency and increase waste. The special allowances and rulings are so numerous, and in many instances so difficult to verify that the timekeepers as well as the local officers are engaged continually in investigations, made necessary because such a large per cent of the more illiterate present such outrageous and false time claims. Even when these claims are known beyond a doubt to be false, the brotherhoods will fight a discharge or a suspension on the ground that the man did not understand that particular article or ruling.

The officers of the brotherhoods not only actually encourage these unfair practices; they threaten to throw any man out of the order who, through a sense of fairness, has the temerity to oppose crookedness. They are always opposed to any measures tending toward economy. How they systematically fight the full loading of trains! They will actually lose time to keep down the loading of engines to capacity. . . . After all, the managements of the roads and the public are to blame for the situation today; for not allowing these ignorant, arrogant, puerile fellows to run amuck, and be jarred loose from themselves.

A FORMER YARDMASTER.

BOLIVIAN TIN OUTPUT.—The Bolivian tin output in 1915 was the largest in history, amounting to 35,000 tons, against 28,000 tons in 1913, and forming 30 per cent of the world's output, against 21 per cent in 1913.

Is Government Ownership in Canada a Failure?

Intercolonial Built for National Purposes, Failure Commercially Due Solely to Low Rates, It is Contended

By J. L. Payne

Comptroller of Statistics, Department of Railways and Canals.

IN offering some criticisms of Mr. Dunn's recent article on "Failure of Government Ownership in Canada" (see *Journal of Political Economy* for July, and *Railway Age Gazette* for July 14 and 21), I think I ought to make my position clear right at the outset. The last thought in my mind is to discuss the principle of state ownership of railways. I am a neutral on that subject. The nationalization of certain roads is likely very soon to become an issue in Canada, and it would be improper on my part, as a public servant, to put myself in the attitude of a partisan. My purpose is threefold: First, to present the true story of the Intercolonial Railway; second, to show that the experience of the Intercolonial cannot properly be taken as demonstrating either the success or failure of government ownership, and, third, to correct some of Mr. Dunn's assumptions and deductions which were manifestly based upon imperfect or misleading information.

Mr. Dunn has given to his readers the most elaborate array of facts ever published, to my knowledge, with respect to the Canadian government railway system. To his statistical data no exception can be taken. He must have given an immense amount of time to the assembling of facts and the making of calculations based thereon. He covered the whole ground with most commendable thoroughness. He put forward all the arguments which he felt could be urged in defense of the Intercolonial. No one could suspect him of garbling or of other forms of unfairness. Nevertheless, he fell into serious error as to basic facts, and his really vital conclusion—that the Intercolonial had proven the failure of government ownership in Canada—was unwarranted.

The Intercolonial was built and is operated by the government of Canada, but it was not built, nor is it operated, to show the soundness of state ownership. It was built as an essential part of the bargain of confederation. When the provinces of Nova Scotia and New Brunswick were approached in the early sixties on the subject of union with the provinces of Ontario and Quebec they were both unfavorably disposed. Nova Scotia was particularly hostile. "Our market," said the Nova Scotians, "is the eastern states." It lies right at our door. It is open the year round. Ontario and Quebec are a thousand miles away and are accessible to us for not more than seven months in the year. We should lose by casting in our lot with the proposed confederation." These were strong and sound objections. They were put forward with equal candor and forcefulness by New Brunswick. They had to be met or the union of the upper and lower provinces had to be abandoned. The Intercolonial was the solution of the difficulty. "We will build and operate," said the delegates at the famous conference in Quebec, "a railway which shall be open throughout the year, and will enable trade to flow between the eastern and western parties to confederation." On that specific pact the road was constructed. It ran from Halifax in the east to Levis, opposite the city of Quebec, in the west. There it formed a junction with the Grand Trunk, which ran further westward to the Detroit river.

Section 145 of the British North American Act, which Americans would regard as the Canadian constitution, reads as follows:

"Inasmuch as the provinces of Canada, Nova Scotia and New Brunswick have joined in a declaration that the con-

struction of the Intercolonial Railway is essential to the consolidation of the Union of British North America, and to the assent thereto of Nova Scotia and New Brunswick, and have consequently agreed that provision should be made for its immediate construction by the government of Canada: Therefore, in order to give effect to the agreement it shall be the duty of the government and parliament of Canada to provide for the commencement, within six months after the Union, of a railway connecting the River St. Lawrence with the City of Halifax in Nova Scotia, and for the construction thereof without intermission and the completion thereof with all practicable speed."

All arguments respecting the Intercolonial which ignore this historical reason for its existence are certain to lead to erroneous conclusions. The road was not built as a government project because it was believed that form of ownership was preferable to corporate control. It was built solely to secure and maintain confederation. It has accomplished that purpose, and it stands today as the absolute seal of a solemn compact entered into at the birth of the Dominion. No corporation wanted to build it. The undertaking had to be carried out by government. Moreover, no existing corporation would today take over the road and operate it on the terms which were tacitly, if not explicitly, made a part of the primary conditions of union. I shall endeavor to make it perfectly plain a little farther along what bearing this fundamental situation has on rates and operating results, as to which Mr. Dunn gave such an excellent and painstaking analysis.

REASONS FOR INTERCOLONIAL'S LOCATION

Mr. Dunn did not get to the root of the matter when he pointed to the location of the Intercolonial as an illustration of the economic mistakes which he seems to assume are inherent in state ownership. He fell into the error of taking it for granted that the government of Canada had a free choice in the matter of route. Certainly no corporation which had commercial results in view would have selected the needlessly long and roundabout course through the wilds of New Brunswick and the south shore of the St. Lawrence in Quebec which was actually taken. That was where the Imperial government came in. For the purely strategic reasons to which Mr. Dunn has alluded the home authorities imperatively insisted that the line should keep as far away from the American boundary as possible. The Dominion government felt bound to concur, and in doing so a section several hundred miles in length was established which does not even now produce any traffic of consequence. If Mr. Dunn had given full value to the real reason for the seemingly absurd location of that portion of the government railway, I am confident he would not have based any deductions whatever upon the fact itself. In other words, the route decided upon was in essential harmony with the peculiar purposes for which the road was built, although those purposes would not in any degree have influenced a corporation looking for a reasonable return upon investment.

If the Intercolonial be accepted as a fair example of government ownership, and the question of success or failure be determined upon operating results, then Mr. Dunn has made out an unanswerable case. It happens, however, that

there is a very big and very important other side. Despite the splendid array of statistical facts which he has given, and the skill with which he has woven those facts into an indictment, he has clearly been misled. With his finding that the government road has never earned fixed charges, and has cost the people of Canada a very large sum of money in interest charges, I cannot find fault. All that is unhappily true. But it is not precisely pertinent. With a large percentage of corporate owned roads in the United States in the hands of receivers it is a little dangerous for an opponent of state control to make net earnings a test of the underlying principle. The advocates of public possession see in large net earnings one of their strongest arguments. Be that as it may, the point I desire now to establish—and it is the kernel of this whole matter—is that the Intercolonial has not paid, in the commercial sense, simply and solely because its freight and passenger rates have been too low. If I fail to prove that contention I shall be left without a vestige of excuse for writing this reply to Mr. Dunn.

Mr. Dunn rests his case very largely on a comparison of the operating results of the Intercolonial with those of the Eastern Lines of the Canadian Pacific. Just why he did this I do not know. In one sense there is no such thing as this group designated "Eastern Lines." They constitute merely a section of a large system. There are no official figures respecting them available. Any data which Mr. Dunn has used must have been obtained from a private source and were obviously based upon wholly arbitrary calculations. I say unhesitatingly that such calculations are not reliable. There is no way by which the operating results of any particular division of a great railway system can be segregated with accuracy. Mr. Dunn probably chose these Eastern Lines because he believed they paralleled in some degree the Intercolonial. They do not. The Canadian Pacific has relatively small interests in the Maritime Provinces. It does not operate a single mile of road, for example, in Nova Scotia, whereas more than one-third of the entire government railway system is in that province. Less than 5 per cent of Canadian Pacific mileage is in the territory which the Intercolonial was built to serve. It would have been entirely fair if Mr. Dunn, for his test of public ownership, had measured the Canadian Pacific as a whole against the Intercolonial as a whole. No question could then have been raised as to the reliability of statistical matter used. I propose to do what I hold Mr. Dunn should have done.

INTERCOLONIAL'S LOSSES DUE TO LOW RATES

With the whole railway field open to him, only a man who was not in doubt as to the strength of his position would dream of picking out the Canadian Pacific for the purpose of testing the operating results of the Intercolonial. But I think it only fair to meet Mr. Dunn on his own ground. The Canadian Pacific is beyond all doubt the most prosperous railway in the world. The Intercolonial has not, taking into account its experience from the commencement, earned operating expenses. Yet I shall make it quite plain that if the Intercolonial had enjoyed the passenger and freight rates of the Canadian Pacific—in other words, had imposed the same charges for transportation service—it would have had relatively higher net earnings than had the latter. On the other hand, if the Canadian Pacific had been compelled from the outset to subsist on the earning power of the Intercolonial it would long ago have passed into the hands of a receiver.

For the purposes of the comparison I propose to make I have selected for the Canadian Pacific the statistical year ended June 30, 1913. That was the year before the war, and prior to the coming in of abnormal conditions. It was very much the best year in the history of that system. For the Intercolonial I have taken the regular fiscal year, ended March 31, 1913, which happened to yield an exact balance as between earnings and operating cost. I have done this

for the sole reason that I want my figures to agree with those which are annually laid before parliament by the responsible head of the government railway system. The figures from "Railway Statistics," which Mr. Dunn has quoted, would not alter my deductions. The Intercolonial has had many better years; it has also had many that were worse. To be quite candid, it is usually regarded as a good year when the government road splits even. It will not be said, therefore, that I have gone out of my way to select a weak parallel or to choose a year that was favorable to the Intercolonial.

In 1913 the Canadian Pacific had passenger earnings amounting to \$34,995,156, based on a rate per passenger per mile of 1.983 cents. The Intercolonial from the same source earned \$3,438,447 on a rate of 1.617 cents. The Canadian Pacific rate was 22.6 per cent higher than the Intercolonial rate, and the Intercolonial rate was 18.5 per cent lower than the Canadian Pacific rate. It, therefore, follows that if the Intercolonial had enjoyed the Canadian Pacific rate it would have earned \$777,089 more, whereas if the Canadian Pacific had been limited to the Intercolonial rate it would have earned \$6,474,104 less. From freight service the Canadian Pacific received \$88,101,523 on a ton mile rate of .784. The Intercolonial receipts were \$8,028,760 from freight on a .570 rate. The Canadian Pacific rate was 37.5 per cent higher than the Intercolonial rate, and the Intercolonial was 27.3 per cent lower than the Canadian Pacific rate. This means that if the two roads had exchanged freight rates, one would have earned \$24,051,716 less and the other \$3,010,784 more. Carried a step farther, this exchange would have reduced the net earnings of the Canadian Pacific from \$43,049,764 to \$12,523,944, a difference of \$30,525,820, while it would have given the Intercolonial a surplus of \$3,787,873. The former line would have had barely enough to meet fixed charges and not a penny for dividends. The Canadian Pacific would have had net earnings of \$969 per mile of line operated while the Intercolonial would have had \$2,540.

Is there anything specious or unfair in the foregoing comparison? Not at all. Mr. Dunn at least will not say so. He gave the same facts, although in a slightly different form, and the very essence of his condemnatory findings against the Intercolonial lay in calculations of this nature. He simply did not go far enough. He did not work out the difference in rates. It is, however, perfectly sound to carry the facts to their legitimate conclusion, and I desire, therefore, to point out that if the exchange of earning power, based on passenger and freight rates, had been made in 1913, the Canadian Pacific would have earned precisely 2.6 per cent on its sworn cost of \$475,370,064, while the Intercolonial would have earned just a shade under 4 per cent on a cost of \$97,127,091. This result, despite the handicap of alleged political interference, waste and so on, upon which Mr. Dunn has laid such great stress, makes the contrast decidedly favorable to the Intercolonial.

WHY NOT RAISE THE RATES?

The natural and logical question an uninformed reader would ask is this: "If low rates account wholly for poor operating results by the Intercolonial, why does not government raise them up to the Canadian Pacific level?" The answer carries me back to the historical aspect. Rightly or wrongly, the people of the maritime provinces believe it was an absolute and fundamental part of the original agreement that the rates of the government line should never produce more than operating expenses. They are firm in the assertion that it would be a flagrant breach of faith to attempt the earning of interest on the cost of the road. There are two further reasons: First, the Intercolonial is exposed along its entire length to water competition for seven months in the year, and for the full year along its most productive mileage. That fact should not, however, be given undue importance. The second reason goes much deeper. The

canals of Ontario and Quebec, from which the people of New Brunswick and Nova Scotia do not obtain a particle of direct benefit, are free. They cost in capital outlay about \$10,000,000 more than did the Intercolonial, and require an annual expenditure of \$1,700,000 for operation and upkeep. The Canadian Confederation is not so perfect that the maritime provinces would consent to pay the fixed charges of the Intercolonial while the upper provinces went scot free on account of the canals. Mr. Dunn will probably find just as costly sectionalism as this in the United States. No government in Canada has felt warranted in disregarding these grounds for resisting rate increases, whatever merits they may have in the eyes of disinterested onlookers.

"POLITICS" ON THE INTERCOLONIAL

It would take up much space to go fully into Mr. Dunn's statements regarding the probable effect of political interference in the administration of the Intercolonial. There is, unfortunately, some ground for his reproaches. Partisan control has not been productive of economy; but, all said and done, no one may say that it has had a seriously prejudicial effect on operating results. The government road has always been well and cheaply administered. Its weakest spot is its high passenger train mileage per mile of road, which is about 35 per cent above that of the Canadian Pacific, but there are two sides to even that matter. When Mr. Dunn says that men are recklessly and needlessly employed, and kept on the payroll through the influence of politicians, he is repeating mere campaign gossip. There is some truth in it, of course, but not enough to account for more than trivial effects on operating results. There is not a large railway in either the United States or Canada which does not suffer in some degree from practically the same thing. That is not my opinion. It was the deliberate and enlightened judgment of a man who knew—the late James J. Hill. I lived for ten years behind the scenes of responsible Intercolonial administration, and know that too much credence has been given to the stories told about the cost of political meddling and political pull.

Mr. Dunn was misinformed when he declared that the Intercolonial, because of political mismanagement, was over-officered in the higher ranks, and paid high salaries. The opposite is true, as the official records amply prove. Up to the time Mr. Gutelius took hold the general manager was paid but \$6,000 a year. The total amount for salaries and expenses of general officers in 1915 was only \$50,625, as against \$479,080 paid by the Canadian Pacific. This represented \$33.95 per mile for the Intercolonial and \$37.08 for the Canadian Pacific. To be a little more specific, the Canadian Pacific in 1915 had 56 general officers, to whom it paid an average of \$20.12 per day, while the Intercolonial had 11, with an average of \$14.39. On the other hand, the Intercolonial had a higher percentage of office clerks, but, as an offset, it paid them a lower rate of compensation. Singularly, in view of Mr. Dunn's comments, the salaries paid to officers in charge of transportation were equal on the mileage basis.

Mr. Dunn was again on weak ground when he lent a credulous ear to the imputation that the government road is adorned with palatial stations. I have seen every station on the Intercolonial many times, and truth compels me to classify them as plain and inexpensive to the point of meanness. The only really inferior thing about the government system is its station buildings. I cannot find the exact cost, but I know that it was relatively far below the cost to any other first-class railway on this continent.

If Mr. Dunn was advised that the Intercolonial has a roadbed of poorer quality than that of the Canadian Pacific, or that the rolling stock is either insufficient or low in standard, he was once more led astray. There is no better roadbed anywhere and the train service equipment is high class in

every respect. It is also necessary to correct the statement which Mr. Dunn makes with regard to the relatively low proportion of operating expenses attaching to maintenance of way and structures. To that aspect of the case he gave considerable emphasis. If he had compared the Intercolonial with the Canadian Pacific system as a whole for 1914 he would have found the percentages 16.7 and 20.1 respectively—a difference, nevertheless, of 3.4 per cent in favor of the Canadian Pacific. Had 1915 been selected for the comparison, however, he would have discovered that the two roads were very close together, the figures being 18.7 and 18.9. The actual cause of the difference in any year lies in the fact that the Canadian Pacific pays more for its labor in the west than does the Intercolonial for similar labor in the east, which fact created in 1915 an average for section men on the whole Canadian Pacific line of \$1.82 per day, as compared with \$1.73 on the government road.

EXPERIENCE THROWS NO LIGHT ON GOVERNMENT OWNERSHIP

I think I ought not, although strongly inclined to do so, take up any further details. Mr. Dunn has made it clear that he regards the poor financial results of Intercolonial operations as pointing to the condemnation of public ownership. I have endeavored to show that the experience of the government road cannot fairly be taken as proving anything, one way or the other, with regard to the basic principle, and that low earnings have been wholly due to the low rates fastened on the system at its birth. This is another way of saying that the Intercolonial is unique among railways, that it was constructed to serve a political purpose, and that its finances have nothing whatever to do with that purpose. It is a first-class railway in all regards, provides an unsurpassed service and has very happily and completely fulfilled its supreme mission as the cement of confederation. It has its defects, no one can deny, and some of them grow directly out of its essential character as a state line. Mr. Dunn has accentuated some of them in his pungent and accurate comparisons. But the pertinence of these comparisons in their application to the broad principle of public ownership has scarcely been established, for it would be a simple matter to find a score of large corporate railways on this continent, any one of which would compare as unfavorably with the Canadian Pacific as does the Intercolonial.

I desire, in conclusion, to express again my appreciation of Mr. Dunn's comprehensive treatment of this subject. It is a subject as to which there are strong convictions, pro and con, both in Canada and the United States. Under such circumstances it is difficult to secure impartial testimony, and equally difficult on the part of those who have taken sides to bring a judicial spirit to bear thereon. I have endeavored, without prejudice, to tell the true story of the Intercolonial, and at the same time to avoid the discussion of public ownership.

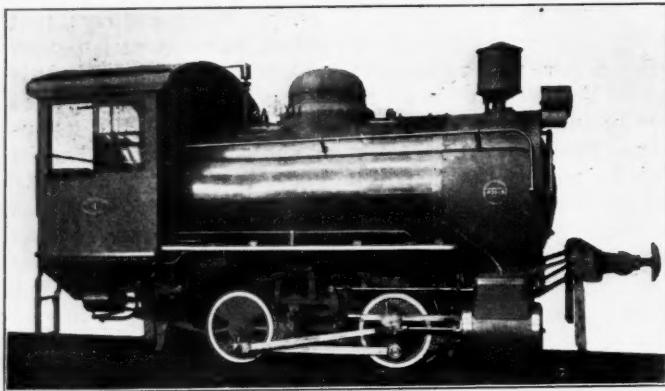
INTERNATIONAL AERO POST SERVICE.—An international airship corporation in Berlin wishes, after the war, to establish an aerial post service (and if this proves a success, a passenger line) between Berlin and Constantinople. A capital of \$6,000,000 is estimated as necessary. Its plan is to have the route extend from Berlin to Carlsbad, continuing to Vienna via Budweis, from there to Budapest, and thence on to Constantinople over Sofia. Between these larger cities are to be numerous landing stations, the cities chosen for landings to subscribe for shares. In this way the corporation hopes to obtain the necessary capital to finance the project. A representative of the corporation has already visited Carlsbad and has talked with the city council as to the probability of obtaining an old race course as a landing station, and as to the chance of the city raising the necessary amount of money as its share of the capital.

STEAM STORAGE INDUSTRIAL LOCOMOTIVES

Among the types of locomotives suitable for industrial service, the steam storage locomotive is receiving an increasing amount of attention, and is proving very successful in certain special classes of service where fire risks must be eliminated.

In the steam storage locomotive the boiler and firebox of an ordinary steam locomotive are replaced by a cylindrical tank, which is charged with steam and water under high pressure. The cylinders and running gear are arranged in the usual manner. The steam, in flowing from the throttle valve to the cylinders, is reduced in pressure to approximately one-third of the initial storage pressure; therefore cylinders of comparatively large diameter are required in order that a tractive effort in proportion to the weight on driving-wheels may be developed. As the steam is drawn from the reservoir, the pressure in the latter is gradually reduced and a certain portion of the water is evaporated by the stored heat. This process continues until the pressure in the reservoir falls to the cylinder working pressure, after which it is necessary to recharge the locomotive. The recharging can readily be done from a stationary boiler plant, through a suitable coupling which is provided on the reservoir. Steam from the stationary boiler enters the reservoir at the bottom, and circulates through the water remaining therein, thus increasing its temperature as well as raising the pressure.

The Baldwin Locomotive Works has recently built seven



Steam Storage Locomotive Built for French War Office

steam storage locomotives for the French War Office, and one each for Carl Koch and the Hormiguero Central Corporation, the two latter being for plantation service in Cuba. The French engines, one of which is shown in the illustration, and that for Carl Koch are of standard gage, and are of the same general dimensions. They have cylinders 15 in. by 16 in. and four driving-wheels 30 in. in diameter. The reservoir is 64 in. in diameter by 13 ft. long; it is charged, in the case of the Cuban engine, at a gage pressure of 160 lb. and in the case of the French engines at a pressure of 170.6 lb. The cylinder working pressure in each case is 50 lb. Plain slide valves are used and are driven by the Stephenson link motion. The weight of each locomotive, ready for service, is approximately 44,000 lb. The locomotive for Carl Koch was designed to haul a load of 176 tons a distance of 8 miles on one charge of steam. The locomotive has a wheel-base of 5 ft. 6 in. and traverses curves of 100 ft. radius. The equipment includes combined steam and hand brakes. The French locomotives have electric headlights and are equipped with a storage battery of sufficient size to keep the lamps burning for ten consecutive hours.

The locomotive for the Hormiguero Central Corporation is considerably lighter than those described above. It is

of 2-ft. 6-in. gage, and weighs 28,250 lb. The storage pressure is 100 lb., and the working pressure 40 lb. The cylinders are 13 in. by 12 in., and the four driving-wheels have a diameter of 28 in.

As far as operation on the road is concerned, a locomotive of this type is handled in the same manner as an ordinary steam locomotive, except that there is no firing to be done. The locomotive can therefore easily be operated by one man.

PRESIDENT RIPLEY ON EIGHT-HOUR LAW

E. P. Ripley, president of the Atchison, Topeka & Santa Fe, has issued a circular to the stockholders of the company, which was enclosed with the annual report for the last fiscal year, giving a statement of the events connected with the recent passage of the so-called eight-hour law for railway train employees. After outlining the demands and history of the controversy, he says: "The President urged the railroad companies, for the sake of avoiding this strike, to waive arbitration of the heavy increase in wages and to grant it without any hearing. He did not urge the railroad brotherhoods that they avert a strike by withdrawing their refusal to arbitrate on any terms their demand for this increase."

He also outlines the President's recommendations to Congress, including the proposal for consideration by the Interstate Commerce Commission of an increase in freight rates to meet the additional expense, and that Congress prohibit strikes pending full public investigation.

"From the outset, however," he said, "it seemed generally understood that no such legislation would be seriously considered at this session of Congress. The result appears to be that according to the view of the government it is under existing laws powerless to protect the public against any nation-wide combination on the part of railroad employees to paralyze by strike all the railroads in the country. If this view is correct, it must be on the theory that the Clayton act, which was passed and approved about two years ago, was intended to and does facilitate strikes at the expense of the public by freeing from restraint and punishment any conspiracy, no matter how widespread or unreasonable, to paralyze by strikes the rail transportation upon which the public is dependent.

"Under this view of existing law upon which the government seems to have acted, it appears that until some remedial legislation shall be adopted the only way to avert such tie-ups is for Congress to grant by special legislation whatever demands labor combinations may insist upon as their price for permitting the people to continue to enjoy railway transportation.

"The question, therefore, becomes of profound importance to you, both as a citizen depending upon railroad transportation and as a holder of railroad stock, to consider what can be done to obtain necessary remedial legislation. The brotherhoods made it clear at the session of Congress just ended that they will resist with all their power any such remedial legislation whether it seeks to prohibit strikes in advance of public investigation or to put any form of restraint upon labor combinations. It is, therefore, reasonable to assume that the public demand for a remedy will have to be persistent and forceful or else the public will continue in its present defenceless position.

"Since the precedent of abandoning arbitration and hurriedly paying the demands of railroad unions by special congressional enactment has thus been established, does it not behoove you to exercise your influence in favor of appropriate remedial legislation?

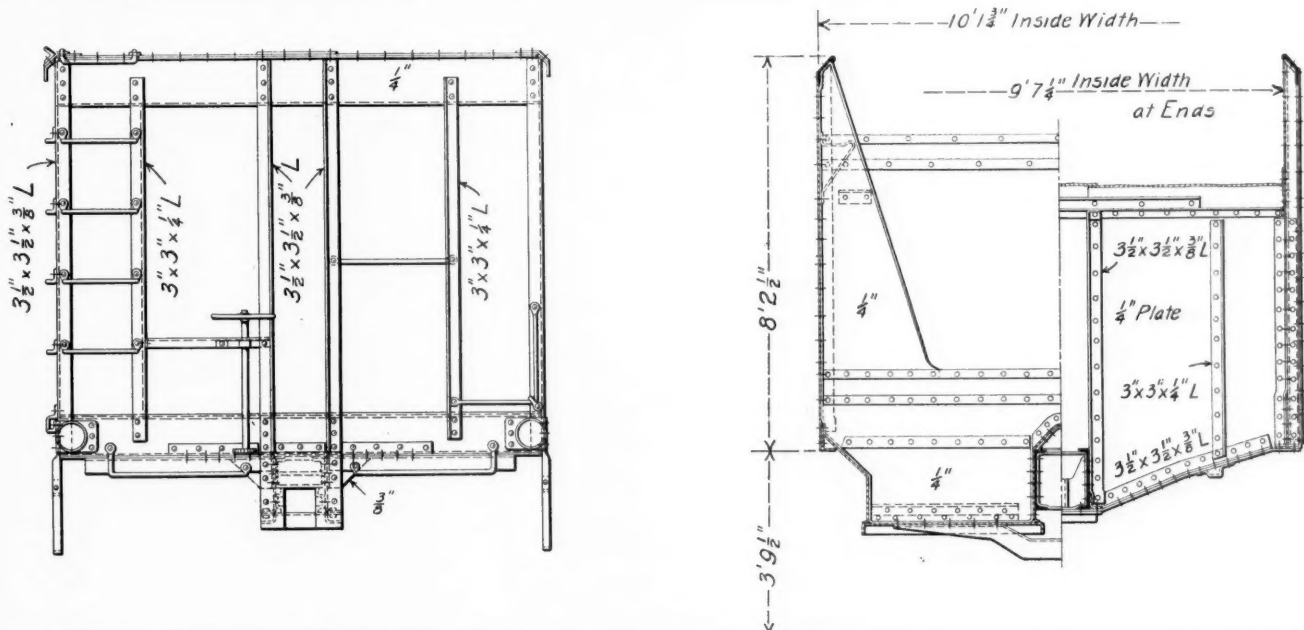
"This company believes that the act which Congress has passed is unconstitutional and that steps should be taken to resist it in every lawful manner."

Hopper Car of 200,000 Lb. Capacity

Length 52 ft. 2 in.; Weight 75,300 Lb.; Six-Wheel Trucks, Built-Up Frames, 6 in. by 11 in. Journals

ALTHOUGH there are several cases where hopper cars of greater than 50 tons capacity are in use, the 50-ton car is still the standard for this type of equipment. Until recently the most notable examples of higher capacity equipment were the 90-ton high side gondola cars

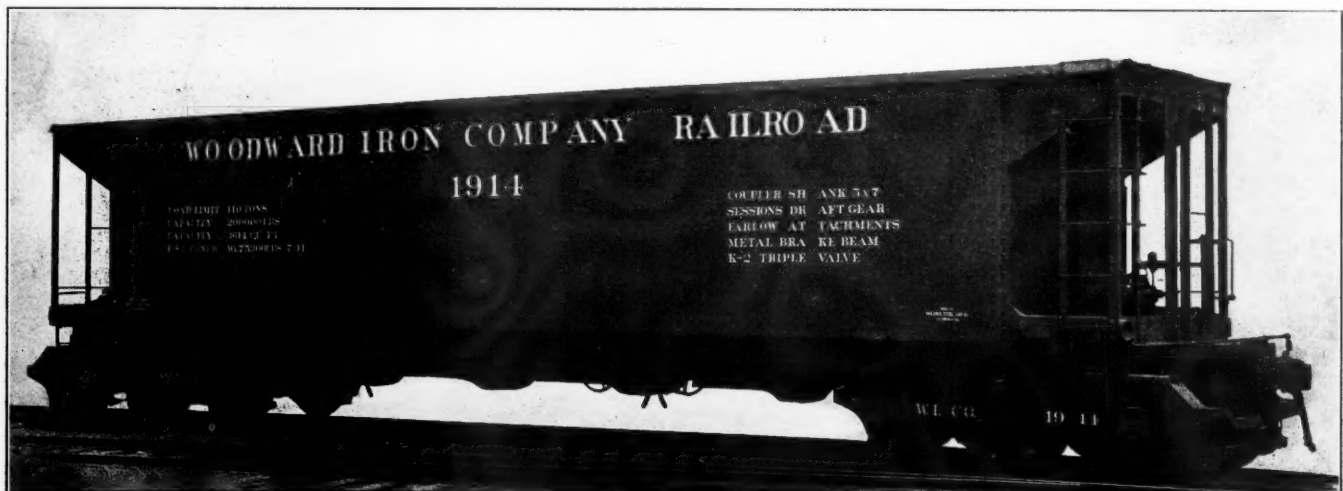
that the hopper angle is 40 deg. from the horizontal, this having been adopted to make the car self-cleaning for ordinary run-of-mine coal. The use of this angle limits the length of the hopper at the top to 46 ft. 4 in., the use of the space at either end over the outside wheels of the six-wheel truck be-



End Elevation and Cross Sections—100-Ton Coal Car

which have been in service on the Norfolk & Western since the latter part of 1912. A car of 100 tons rated capacity, however, has been built for the Woodward Iron Company, Woodward, Ala., by the Pressed Steel Car Company, which has now been in coal carrying service for about two years,

ing thus impossible. The cars are 10 ft., $1\frac{3}{4}$ in. wide inside and have a capacity of 3,600 cu. ft. The light weight is 75,300 lb., and considering the maximum carrying capacity as 10 per cent overload, the ratio of revenue load to total weight of car and lading is 74.5 per cent. This is somewhat

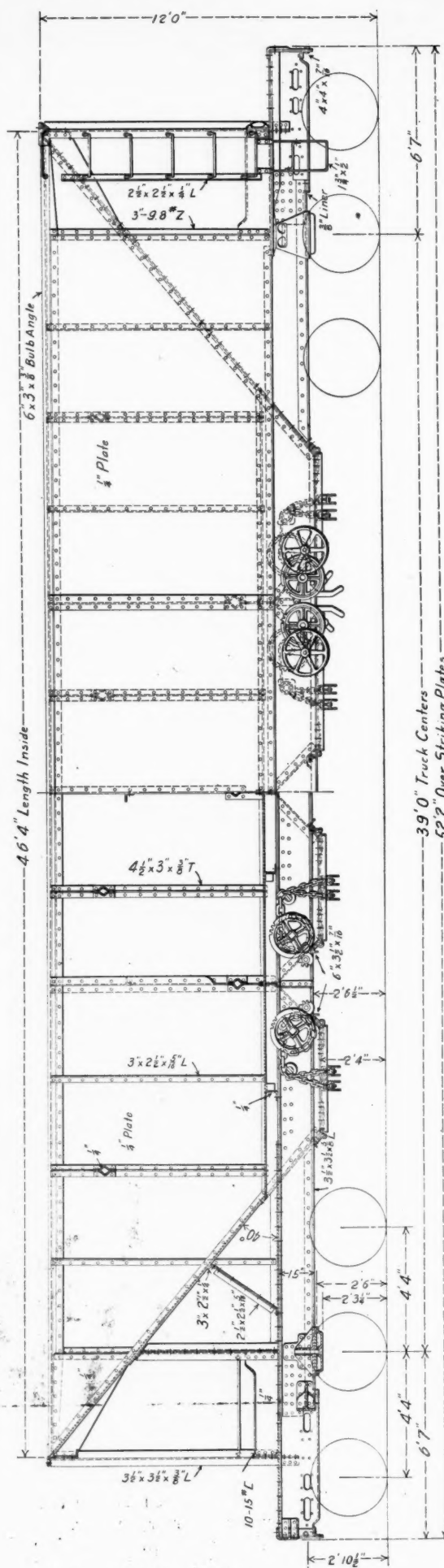
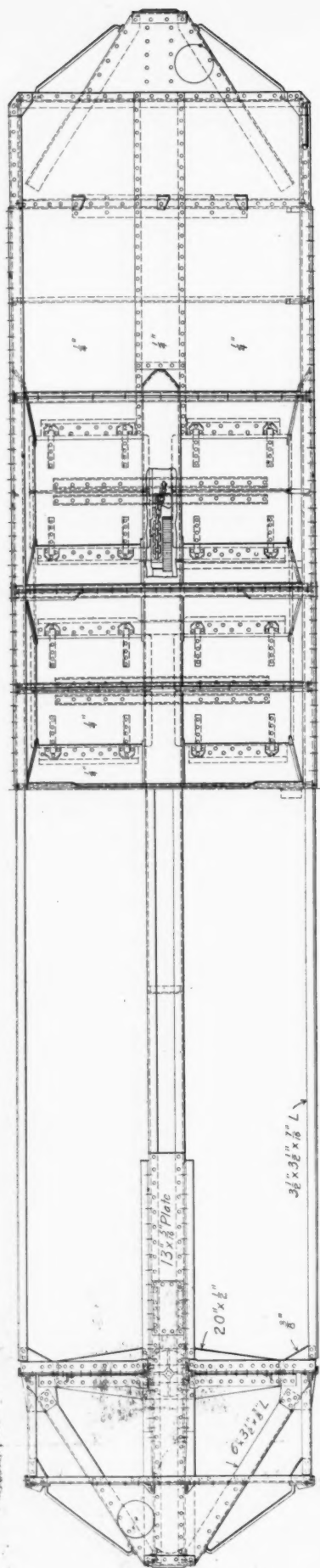


100-Ton Coal Car—Woodward Iron Company

during which time its performance has been very satisfactory. The first year that it was in service it handled 11,800 tons of coal with no repairs whatever, except to air brake hose.

The car is 52 ft. 2 in. long over the striking plates and has a maximum height of 12 ft. above the rails. It will be noted

less than the same ratio for the Norfolk & Western cars referred to above. These cars with a maximum capacity, including 10 per cent overload, of 198,900 lb. and a light weight of 59,000 lb., have a ratio of revenue load to total load of 77 per cent, six-wheel trucks being used in both



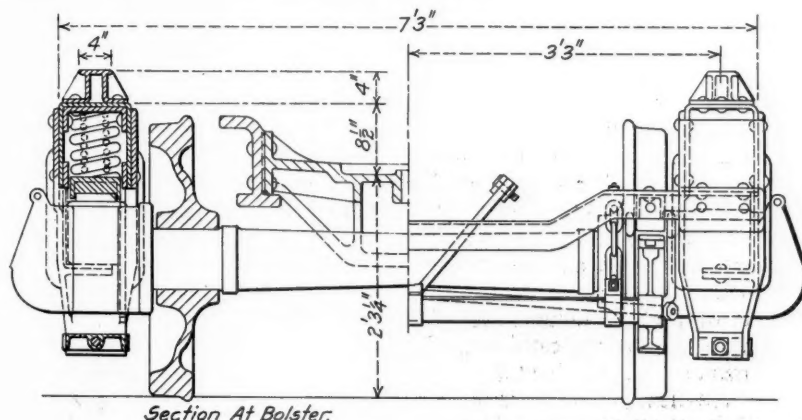
Plan and Elevation of the Woodward Iron Company's 100-Ton Hopper Car

cases. The ratio is better, however, than the average 50-ton car with four-wheel trucks, which will be approximately 72 per cent.

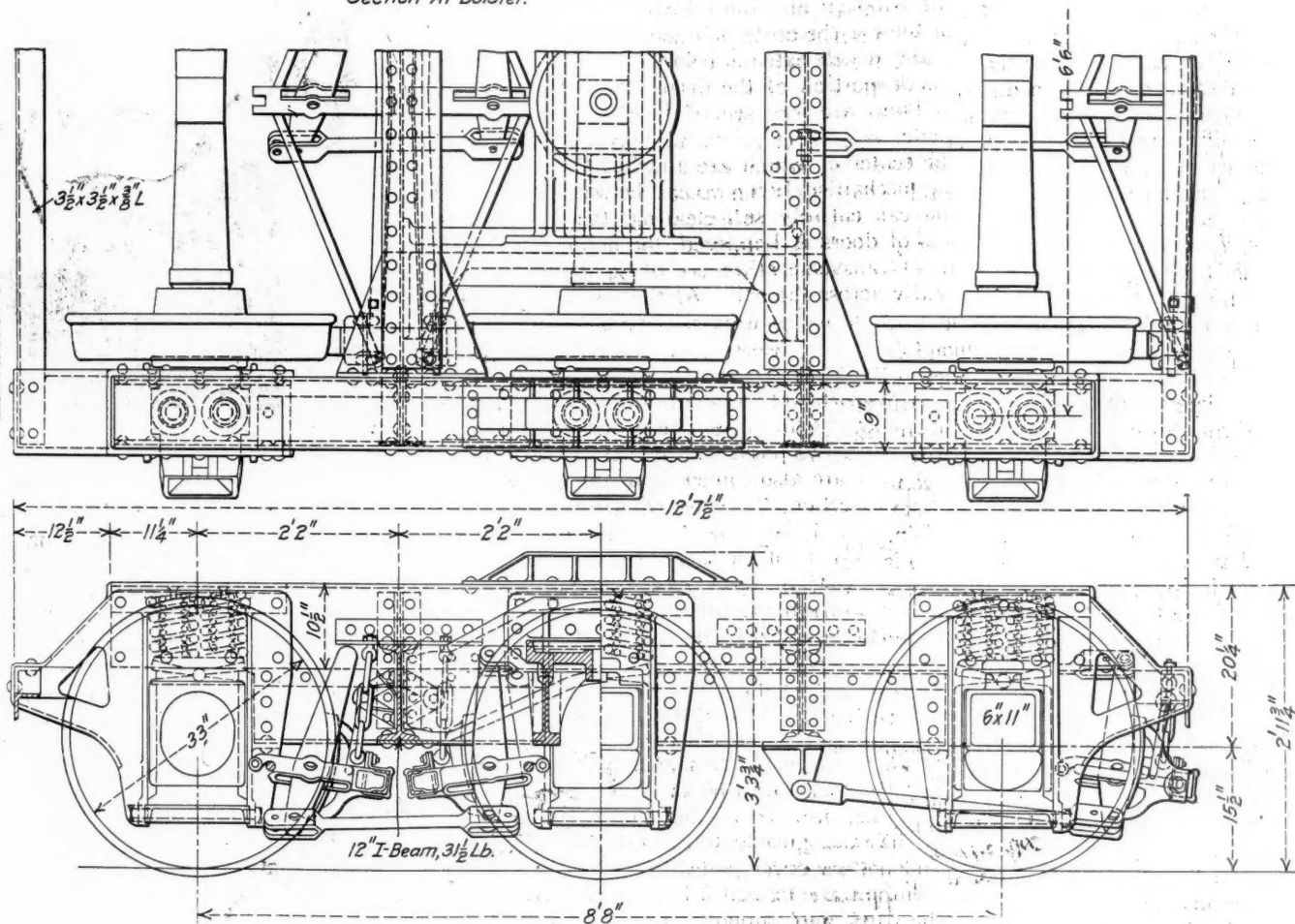
The underframe is of the through center sill design, the sills being 15-in. channels placed with the flanges inward and having a width from back to back of 13 in. Top cover plates of 5/16 in. thick and 13 in. wide extend from about 12 in. inside the hopper to the end sill and the bottom flanges are stiffened by the use of 3 1/2-in. by 3 1/2-in. by 3/8-in. angles

sill cover plate is widened to form a deck, completely covering the space between the center sills and the diagonal stiffeners.

The transom is of unique construction. It is carried from the center and side sills up to the bottom of the hopper sheet and consists of vertical 1/4-in. plates extending from either side of the center sill to the side of the car, the edge of the plate at the center sill being stiffened vertically by two 3 1/2-in. by 3 1/2-in. by 3/8-in. angles, one on either side, at a point above



Section At Bolster.



Built-Up Six-Wheel Truck for Woodward Iron Company's 100-Ton Car

riveted to the outside of the sills. These extend from the hopper to the draft sills. The end sill is a 10-in., 15-lb. channel, which is placed across the top of the center sills, 2 ft. 11 in. back of the striking plate. The projecting ends of the center sills are stiffened by means of 6-in. by 3 1/2-in. by 3/8-in. angles extending from the end of the sills to the ends of the transom, to which they are attached by means of 3/8-in. horizontal gusset plates. In front of the end sill the center

the side bearing by one 3-in. by 3-in. by 1/4-in. angle placed on the side of the sheet toward the end of the car, and at the outside to the back of a 3-in. by 3-in. by 1/4-in. angle and the web of a 3-in., 9.8-lb. Z-bar. These two members in effect form the cornerpost of the body side frame. The space between the end of the end sill and the transom is closed by a 1/4-in. pressed steel channel, the upper flange of which is flattened out to permit the end of the piece to be riveted be-

tween the flanges of the angle and Z-bar members of the post. Flanges are formed at the lower end of the transom plate by two 3½-in. by 3½-in. by ¾-in. angles, one placed on either side; at the outer end these are riveted to a ¾-in. gusset plate to which are also attached the flanges of the body and end sections of the side sill and the diagonal channel stiffeners. The two sections of the transom are further stiffened and securely tied to the center sill by a ½-in. bottom cover plate, extending across the center sill from gusset plate to gusset plate. This cover plate tapers from the width of the transom flanges at the ends to a width of 20 in. under the center sill. Pressed steel diaphragm fillers are placed between the center sills at points about half-way between the ends of the hopper and the center of the car, and the center castings form fillers at the transoms. The side sills are 3½-in. by 3½-in. by 7/16-in. angles, the horizontal flanges being turned toward the center of the car.

The end plate is a ¼-in. pressed steel member of Z-bar section, to which is riveted the upper end of the hopper sheet. The end of the hopper is supported by four 3½-in. by 3½-in. by ¾-in. angles, one at each corner and one on either side of the center sill. In addition to these members two 3-in. by 3-in. by ¼-in. angles are provided to support the ends of the grab irons and ladder irons. The end hopper sheet is a ¼-in. plate, which is supported throughout its width at the transom and from the center sills, at a point midway between the transom and the bottom of the hopper. On the interior of the car the center sills are covered with a housing of ¼-in. plate, which extends below the sides of the sills to form the inside portion of the drop door frames.

There are four sets of doors, those on opposite sides of the center sill being joined by special pressed steel channels, to the center of which are attached the door chains, the operating mechanism being housed between the center sills. To make the car entirely self-clearing, the space between adjoining sets of doors is hopped, the hopper sheets being supported from transverse stiffeners of ¼-in. plate which extend vertically across the car. At the top these stiffeners are flanged to form a half-diamond section, the diamond being completed by a similar section of ¼-in. plate, riveted in place.

The sides of the car are braced to these members by pressed steel plates, ¼-in. thick, the lower edges of which are riveted between the two pieces of the transverse stiffeners. The sides of the car are also joined near the top by four cross ties of diamond section, the ends of which are secured to vertical stiffeners of 4½-in. by 3-in. by ¾-in. T section. Longitudinal stiffness of the sides at the top is provided by a 6-in. by 3-in. by ¾-in. special bulb angle, the web and bulb of which are turned inward.

The cars are carried on six-wheel trucks, the distance between truck centers being 39 ft. The truck is of pressed steel construction, having a wheel base of 8 ft. 8 in. The principal member of the side frame is an inverted U-section of ½-in. plate, 9 in. wide by 10½ in. deep, the outside flange of which is riveted to a pressed steel angle, which gives the frame a total depth of 20¼ in. between the pedestals. The transoms are 12-in., 31.5-lb. I-beams, which are securely framed and gusseted to the side frames and provided with top and bottom cover plates 7½ in. wide by ½ in. thick. The transoms are located 2 ft. 2 in. on either side of the center of the truck and support two heavy longitudinal steel castings which carry the cast steel bolster.

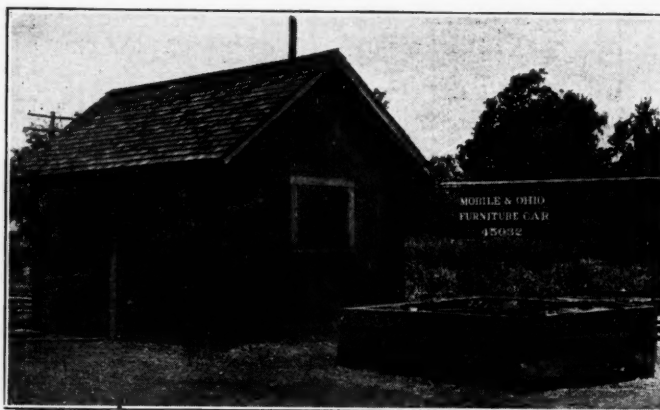
The pedestals are steel castings and are riveted to the side frames. The load is transmitted from the side frames to the journal boxes through two 6¼-in. by 8-in. double coil springs over each journal box. The springs do not rest directly upon the top of the box, an equalizing spring seat being interposed between the box and the springs. The pedestals are closed at the bottom with binders. The wheels are 33 in. in diameter and are mounted on axles with 6-in. by 11-in. journals.

RECLAMATION ON THE ROCK ISLAND*

By J. G. Kirk

District Storekeeper, Chicago, Rock Island & Pacific, Silvis, Ill.

The Rock Island began to enlarge its scrap-handling facilities and reclamation plant in 1906 to handle scrap and reclaim material more systematically. At that time a new scrap dock was erected at Silvis, Ill., where the general shops and general stores are located. The structure was made from second-hand bridge lumber, and all of the handling of scrap at that time was done by men with wheelbarrows. In 1908 a four-ton gantry cantilever-type crane was purchased and installed; in 1911 a second crane of the same type, but of ten tons capacity, was purchased and installed, and the dock was extended to double its capacity. With the completion of the new facilities orders were issued that all the scrap on the railroad should be sent to Silvis. Under the organization built up, men thoroughly trained in the handling and reclamation of scrap go over every piece received and properly classify the material for sale and reclaim that fit for further use. In 1913 a five-ton gantry crane was purchased for the handling of maintenance of way material, such as frogs, switches, boilers, pumps, concrete bars, etc., also to handle the scrap rail. These facilities are all the Rock



Scrap Dock at a Section House

Island has today, although further extensions and improvements are contemplated and will be added as early as practicable.

In the reclaiming of material on any railroad, it is of prime importance that handling of the scrap and the reclaiming of usable material should be carried on as economically as possible, otherwise the maximum saving cannot be realized. To illustrate what can be done along these lines, the following figures show what has been accomplished on the Rock Island. They are based on the tons handled in and out:

Year	Tons handled	Cost of handling	Cost per ton
1906*	2,598	\$ 679.59	\$0.261
1907	20,325	4,993.09	.245
1908	47,780	7,002.00	.148
1909	34,877	4,275.99	.122
1910	53,953	4,954.09	.091
1911	74,710	6,189.93	.082
1912	73,080	5,789.25	.079
1913	92,234	7,732.52	.083
1914	88,210	7,179.52	.0813
1915	103,460	7,951.36	.0768

*Figures for 1906 are for last three months only.

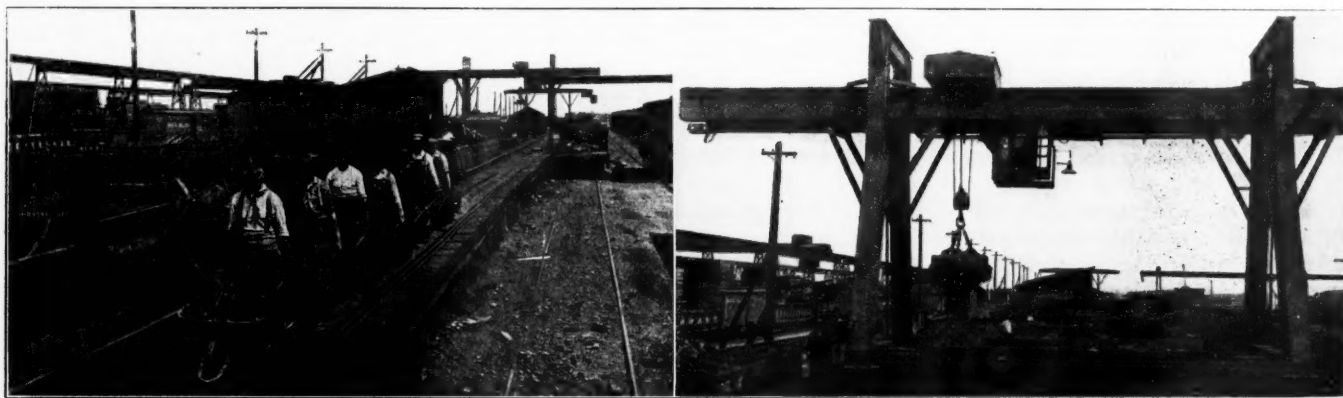
It will be noted that the installation of machinery to handle the scrap resulted immediately in economies in handling. Had the cost of handling scrap in 1915 been as high as in

*Abstracted from an article which won the first prize in a contest on the Reclamation of Scrap Maintenance of Way Materials, conducted by the Railway Maintenance Engineer.

1906 it would have cost the Rock Island \$19,049.33 more to handle its scrap. While the above figures show in dollars and cents what has been saved along this line, the four pictures arranged in pairs show the new and old ways of handling scrap and scrap rail, and illustrate more graphically how this economy has been brought about.

It may be thought by some not thoroughly versed in the plan of handling in use on the Rock Island that on account of the low cost some of the features of reclaiming material may have been sacrificed to reduce this cost. This, however, is not true, as the economy in handling has been brought

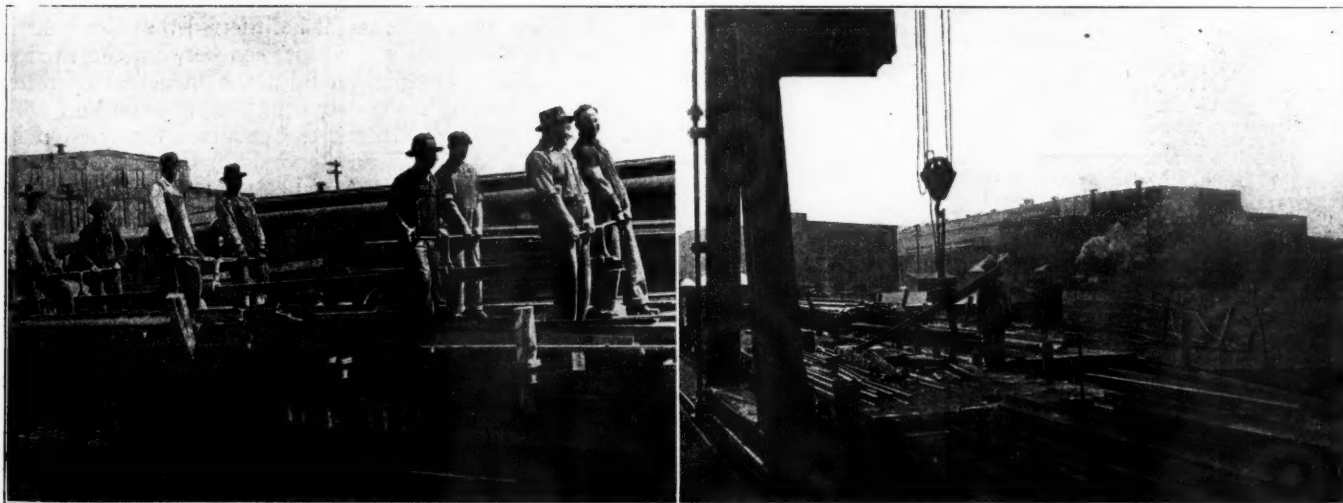
locally as possible, as it is realized that the handling of this material and the unnecessary haul occasioned by sending all of it, whether serviceable or not, to a central station for reclamation and return, costs considerable money on account of the extra labor and haul occasioned as well as the necessity for a larger investment in unapplied material because of the greater length of time it is kept out of service. No particular good is accomplished by sending all second-hand serviceable material to a central reclaiming station other than to pile up a large paper showing of material reclaimed, while if the material is reclaimed locally where practicable and returned



Handling Scrap—Past and Present

about almost entirely by a reduction in the costs of unloading and loading. The cost of sorting does not offer as great a possibility for economy as the other two operations, for the reason that every piece of material has to be handled by hand and carefully scrutinized to get it into its correct scrap classification or to reclaim it. It is unloaded from the cars into the center of a sorting bin with a crane, and the sorters then throw one piece at a time into the various small bins provided for scrap and reclaimed material. As soon as the small bins are full they are emptied by the cranes with mag-

net at once to service (although the figures as to the material reclaimed may not be available), the railroad will receive a greater real benefit because of the greater economy in handling in this way. The standard section house and scrap dock in use on the Rock Island is an example of what can be accomplished along this line and is shown in one of the photographs. The construction of these docks may at first thought appear to be unnecessary, but it has been found that they go a long way to establish system by providing a place for the material collected, and they can be cheaply constructed from



Old and New Ways of Unloading Scrap Rail

nets either into cars being loaded out or into the larger storage bins.

During 1915 the Rock Island reclaimed \$655,842 of material of all classes. These figures include material for both mechanical and roadway departments. However, as this article deals with roadway materials only, those items of reclamation pertaining to that department will be discussed.

To begin with, the reclaiming of material on the line is encouraged and an effort is made to save as much of it

second-hand lumber. Scrap, as soon as made, is picked up and such articles as track spikes, track bolts, rail anchors, etc., which can be used again are reclaimed and placed in the section house to protect them properly, and any material which cannot be repaired or used locally is placed in the scrap bin for shipment to the central reclaiming station.

It is important that the scrap be kept moving as rapidly as possible, in order that the revenue to be derived from its sale be obtained as early as possible, also so that the usable ma-

terial may be returned at once to service. With the idea of expediting the movement of scrap, and at the same time avoiding accumulation, there is in force on this road a regular loading schedule for each division, one division loading its scrap on the first, another on the third of the month, and so on. By following this schedule the divisions are cleaned up at least once each month.

After all the reclamation which can be economically handled in the field is taken care of, the scrap moves to the central station, where it receives the final inspection. Among the items which are being reclaimed at the Silvis plant are track shovels. This is a simple procedure, requiring only the use of an anvil and vise and such tools as hammers, chisels, etc. The operation consists of removing good handles of shovels from broken blades and vice versa, and attaching the good blades and handles so reclaimed together. Thus good, serviceable shovels are obtained with the purchase of practically no new material, with the exception of a few rivets. During 1915, 2,577 track shovels were repaired in this way at a saving of \$824.57.

Guard rails are made from rail reclaimed from the scrap at a cost of approximately 35 per cent of the purchase price of new ones, and their service in track will be as long as new material. On roads the size of the Rock Island a saving of \$4,200 yearly should be realized in this item alone. Switch points 11 ft. long are being made by cutting back old 15-ft. or 16½-ft. points standard for main line. These 11-ft. points are used for yard and side tracks only. The old points are cut off and new points planed onto them at a cost of from 60 to 65 per cent of what the longer points formerly used to cost. A saving of approximately \$3,000 yearly can be made in this way. On roads not possessing a frog shop arrangements can no doubt be made with the various frog manufacturers to take care of these repairs at a considerable saving over the purchase of new material.

During 1915, 15,270 track tools of various kinds were reclaimed and repaired at a saving of \$4,787.94. These repairs can be made in any ordinary blacksmith shop. During 1915, 112 flanger, 1,020 whistle, and 431 temporary slow and release signs were made in the shops from flues and iron and sheet steel reclaimed from scrap at a saving of \$608.

The following material was reclaimed during 1915:

	Saving
47 derail stands	\$ 10.43
31 derails	232.15
49 head rods	98.20
17 connection rods	18.11
58,706 lb. plates	433.23
3,713 rail braces	420.23
2,375 rail anchors	346.96
44,050 lb. track spikes	402.19
53 hand-car wheels	123.86
325 lb. boat spikes	4.36
4,230 lb. screw spikes	75.70
163 slide plate braces	20.64
3 sets slide plates	29.17
26 sets heel block plates	21.76
Total	\$2,236.90

The following are some of the items that were repaired and returned to stock during the same year:

	Saving
588 switch stands	\$ 4,098.27
108 frogs	1,434.09
8 roller rail benders	898.65
3 jim crow benders	49.27
258 pieces switch material	256.83
203 11-ft. switch points	407.09
693 hand and push cars	16,275.08
15,270 track tools	4,787.94
810 track jacks	2,833.74
109 velocipedes	2,000.98
18 motor cars	2,318.69
Total	\$35,360.63

The central reclaiming station should also carefully watch the service being given by various articles of material purchased by the railroad and report any that fails to give satisfactory service as indicated by the scrap articles received. Any items purchased subject to guarantee and failing to fulfill the terms of the guarantee should be placed at one side

and held for free replacement. From \$3,000 to \$5,000 per year can be saved in this way on maintenance of way material alone.

RAILWAY MAIL PAY ON SPACE BASIS

By H. F. Lane

WASHINGTON, D. C., October 3, 1916.

A statement to the press issued by the Post Office Department last week, announcing the proposed establishment of approximately 90 per cent of the railway mail transportation service on a space basis of pay on November 1, in place of the present weight basis, indicates that Postmaster General Burleson has found a way to do to the railroads what he would like to have the Interstate Commerce Commission do to them, but to do it first.

Under the space basis the department will pay the railroads varying rates per mile for various amounts of space up to a full car, instead of on the present tonnage basis, which is on a sliding scale, decreasing as the tonnage increases, with supplementary payments for full post office cars.

The post office appropriation bill recently passed by Congress and approved on July 28 establishes tentative rates for the compensation of the railways for transporting the mails on the space basis experimentally on routes to be selected by the Postmaster General with the approval of the Interstate Commerce Commission. It also directs the Interstate Commerce Commission, as soon as practicable, to determine fair and reasonable rates of compensation for the transportation of mail matter and to prescribe the method for ascertaining such rate or compensation, by weight or space or both.

"Pending the decision of the Interstate Commerce Commission as hereinafter provided for," the law says, "the existing method and rates of railway mail pay shall remain in effect except on such routes or systems as the Postmaster General shall select, and to the extent he may find it practicable and necessary to place upon the space system or pay in the manner and at the rates provided in this section, in order to properly present to the Interstate Commerce Commission the matters hereinafter referred thereto."

From this language it might be inferred that Congress intended to make possible a comparison between the two systems of basing compensation by a test in actual operation, but it is announced in the statement issued by the Post Office Department that "the Interstate Commerce Commission has given consent to Postmaster General Burleson to place on a space basis experimentally practically all the railway routes on which mail transportation is performed" in order to demonstrate to the commission "the feasibility and practicability of the space system."

The 10 per cent of the service which will not go upon the space basis on November 1 is what is known as the "closed pouch" service, which consists of mail transmitted in locked pouches and sacks and handled in baggage cars by the agents of the railway companies.

The consent and approval of the Interstate Commerce Commission to this plan, although it has just been made public in the Post Office Department statement, was given under date of August 29 in a letter from the secretary of the commission to Postmaster General Burleson. This letter states that the Interstate Commerce Commission has considered the application of the Postmaster General of August 1 and that it "gives consent and approval to the adoption of the space basis plan and the rates provided thereunder on certain routes over which mails are transported, which routes are named in the appendix submitted with your application." This approval, the letter states, is granted "upon your statement and the belief of the commission that it is not only practicable, but necessary, to place this amount of the

postal service upon the space basis plan in order that you may properly present to the commission the matters referred to in section 5 of the act."

By including in his selection of "certain routes" practically all the railway mail routes in the country, the Postmaster General has secured at least a temporary advantage which may last for as long as he is interested in the subject, although the ultimate extent to which either the space or weight basis of pay shall prevail and what the compensation for the service rendered by the railroads in handling the mails shall be, is left to final determination by the Interstate Commerce Commission.

That he has no present intention of ever letting go of this advantage is indicated in the following statement by Second Assistant Postmaster General Praeger: "The Postmaster General has gained experimentally," he says, "all that he has contended for in the Post Office Department's long fight for a just and rational measure of service and pay for railway mail transportation, and in assigning to me the task of inaugurating this far-reaching reform he has directed that full justice be done alike in the matter of service to be required of the railroads and service to be rendered to the public. Canadian officials have assured us that after three years' trial Canada will never change from the space back to the weight basis, and I believe it will be entirely possible to state and administer the great railway mail transportation service of the United States in a manner so just and practicable from a transportation standpoint that the space basis now authorized experimentally will in the end prove acceptable to the Interstate Commerce Commission and the railroads."

In empowering the commission to fix mail pay rates and the basis for ascertaining them, the law provides that within three months from its approval, or as soon thereafter as may be practicable, the Postmaster General shall file with the commission a statement showing the transportation required of all railway common carriers, including the number, equipment, size and construction of the cars necessary for the transaction of the business; the character and speed of the trains which are to carry the various kinds of mail; the service, both terminal and en route, which the carriers are to render, and all other information which may be material to the inquiry. The Postmaster General is also to file with the commission a comprehensive plan for the transportation of the mails, embodying therein what he believes to be the reasonable rate or compensation the carriers should receive. Thereupon the commission is to give notice of not less than 30 days to the carriers, and to proceed with a hearing on the subject in the manner now provided by law for hearings between carriers and shippers, after which it shall establish fair and reasonable rates of compensation. Pending such hearings and the final determination of the question, the commission is authorized to request of the Postmaster General that weighing of mails shall be held for statistical purposes.

Secretary McGinty's letter to the Postmaster General says that promptly after the space basis plan has been inaugurated it is understood that the latter will proceed with the re-weighing of the mails on all routes for a period of 30 or 35 days and that he will furnish to the commission statements showing the routes as re-stated or changed, the weights ascertained, the old routes or parts of routes that are included in each of the re-stated routes, the old weights and compensation thereunder, the new weights and the compensation that would accrue thereunder and the compensation accruing under the space basis plan.

Meanwhile, however, the space basis plan will remain in effect for an indefinite period unless changed by the commission.

The law provides that if the final decision of the Interstate Commerce Commission shall be adverse to the space

system and if the rates established by it under whatever method or system is adopted shall be greater or less than the rates provided in the law, the Postmaster General shall readjust the compensation of the carriers on such selected routes and systems in accordance therewith from the dates on which the rates named in the law became effective.

By direction of the Postmaster General work is now in progress in the 15 railway mail divisions of the United States for the establishment of the change of basis. Second Assistant Postmaster General Praeger has just concluded a conference with the 15 division superintendents of the railway mail service regarding the change, and on October 4 he will hold a conference with a committee representing the railways on the same subject. This railway committee, however, apparently is to be consulted on details only, as the railways have not been consulted regarding the plan of carrying out the space basis experiment on a nation-wide scale.

The statement issued by the department says:

"The Post Office Department has always desired that Congress should place on a space basis only the character and quantity of service which will go experimentally on space on November 1, and to leave on the weight basis, with annual weighings, the small amount and the character of service which, by the commission's order, will remain on the weight basis. Congress, however, voted to place all of the railway mail transportation on a space basis, subject to the approval of the Interstate Commerce Commission after a full investigation.

"It is expected that the cost of the mail service on a space basis will be somewhat in excess of the cost on a weight basis, at least at the outset, but this excess is counterbalanced by certain economies and savings that can be effected in transporting empty equipment and supplies in the space paid for but unused when mails run light. In the opinion of the Post Office Department the value of the installation of the space basis will be fair both to the department and to the railroads by reason of its elasticity, which will enable the department to pay the roads according as the service which they render increases or decreases."

It will be noted that the commission's "consent and approval" has now been magnified to an "order."

The joint congressional committee on railway mail pay which submitted a report to Congress in 1914 recommending the space basis of payment and also rates of pay on that basis, estimated that the rates would increase the total mail compensation of the railways by about \$3,000,000 a year. The Postmaster General evidently does not intend that the railways shall get this money if he can help it.

During the hearings before the Senate committee on post offices and post roads last spring the railways vigorously opposed the space basis of payment as being unscientific and inequitable. They also opposed the proposed rates as being unreasonably low. Their principal effort was to have the mails weighed annually instead of every four years, so that the railways would not have to carry the increased weight of the mails for four years for nothing. As a solution of the question the Railway Mail Pay Committee suggested a bill that would readjust the pay by providing for an annual weighing, pay for space in apartment cars, relief from the side and terminal messenger service, and for an investigation of the entire subject by the Interstate Commerce Commission, with a recommendation by the commission to Congress as a result of this investigation as to whether the pay should be continued on the weight basis or on a combination of weight and space or on a straight space basis. Most of the railway officers said they would be satisfied with the present rates if they could have an annual weighing.

Of course, the primary purpose of the space basis plan is to enable the Post Office Department to put more mail into a mail car without paying the railroads any more for it, thereby enabling the Post Office Department to make a great

showing of economical and efficient administration. As the proposed rates are based on the present average loading of about 3 tons to a car, while the maximum capacity of the cars ranges up to 20 tons, by paying what is now paid for 3 tons the department would have the privilege under the space basis of loading cars in some cases to a capacity of 20 tons without paying the railroads anything for hauling the added weight. It works on the same principle as if the government should lease a passenger car, which had been customarily filled to only a part of its capacity, paying for it on the basis of the average car mile earnings, and then admit additional passengers at so much a head. The railroad would be carrying more passengers and hauling more weight, but it would receive no more money for it.

By estimating that the rates proposed will give the railroads \$3,000,000 to \$5,000,000 more a year than they are now receiving, the advocates of the law gave themselves a reputation for great generosity, but some of them in defending themselves against the charge of too great liberality to the railroads, have felt called upon to explain the joker to other members of Congress. For example, Representative Moon said in Congress on February 8, 1916:

"But, you may ask me, if it is costing more by three or four million dollars, in the first place, to go to the space basis than to remain on the weight basis, why should we make the change? My answer is * * * your department can handle the cars in which they pay for the space and can so adjust the loading and unloading and the transportation as to recoup within a year or two every dollar that is lost by the change in the basis of compensation from weight to space."

At another time he said:

"* * * it is entirely new law, and it does not show a saving on its face, and cannot do it, but only shows an administrative proposition of saving. The saving will occur, as the department thinks, in the handling of the mail. In other words, you have changed from the quadrennial weighing of the mails on a weight basis, on which the pay is to be computed, to the space provision, and you will have enough space under the contract to carry all your parcel post probably without any additional compensation and save many million dollars annually. That is their theory."

Under the space plan one railroad might carry 1 ton, another 10 tons and another 20 tons of mail the same distance for the same pay. On many routes the railroad mail traffic officers have testified it would be possible for the department to double, treble or quadruple the mail tonnage per car without one cent additional pay to the railroads.

Under the beneficent parcel post rates the new law makes it possible in some instances to take freight out of the freight cars and to put it into storage mail cars without paying the railroads a cent and to offer the shipper a passenger train service instead of freight train service at greatly reduced rates and with free delivery service at destination. It is only necessary for the shipper to pack his freight in 50-lb. packages. Of course, the Post Office Department will receive its revenue on the weight basis and the more mail it can crowd into a given space on the passenger trains, the more money it will make. By consolidating mail now handled in two cars on two trains into one car on one train the department can greatly decrease its expense. This would not be giving the most frequent mail service, but the frequency or infrequency of the service does not show in the public reports of the department.

The basic rate fixed by the law is 21 cents per car mile for a 60-ft. car. That is supposed to be based on slightly less than the present average earnings of the railroads per car mile from passenger and express service. Some roads earn a greater amount than that, while some earn less. Those that earn less naturally hoped to increase their earnings as the traffic develops, but under the space basis of payment for the

mails the benefit of the increment goes to the Post Office Department. The roads that now earn more than 21 cents are given an inducement to accept the new rates by a penalty of \$1,000 a day provided by the law for refusal.

The commission on Tuesday of this week announced an order instituting a proceeding of inquiry and investigation "with a view to the entry of an order or orders fixing and determining fair and reasonable rates and compensation for the transportation of mail matter by railway common carriers and the service connected therewith, and the method or methods of ascertaining such rates or compensation." The investigation will be set for hearing at such times and places and in such manner as the commission may hereafter direct. The Committee on Railway Mail Pay had previously asked the commission for a hearing on the subject to consider a large number of details incident to the change from the weight to the space basis before the change goes into effect.

The Railway Mail Pay Committee has appointed an advisory committee of counsel to represent the railways in handling the mail pay question before the Interstate Commerce Commission, composed chiefly of lawyers who are continually engaged before the commission in rate matters. The committee is composed of G. S. Patterson, of the Pennsylvania; H. A. Scandrett, of the Union Pacific; R. B. Scott, of the Chicago, Burlington & Quincy; O. E. Butterfield, of the New York Central; F. H. Wood, of the Southern Pacific, and A. P. Thom, counsel of the Railway Executives' Advisory Committee.

* * *

THE EIGHT-HOUR LAW

Most of the public discussion of the eight-hour law in the last few days has come from the critics of the measure rather than from its advocates. Although several days ago it was announced from President Wilson's headquarters at Long Branch that he would take occasion to refer frequently to his settlement of the threatened railway strike and proposed to feature it in his campaign, he has thus far made only one speech on the subject, that at Shadow Lawn on September 23, and it has since been reported that he has decided not to dwell on this question as much as on other issues. Possibly the Democrats would prefer to have the misleading title of the "eight-hour law" speak for itself.

Representative Adamson, chairman of the House Committee on Interstate and Foreign Commerce, whose name is attached to the bill, has given out a newspaper interview in which he is quoted as taking upon himself the credit or the blame for its passage. "The eight-hour bill was my bill," he says, "not the President's. I had to convince the President that I was right and that he and Senator Newlands were wrong and they finally had to admit I was right."

Meanwhile, however, the Republicans are continuing to make capital of it, apparently with considerable success. Candidate Hughes has attacked the President's course in a large number of his speeches. In an address at Saratoga Springs on September 29 he read letters from Harry A. Wheeler, chairman of the committee on the railroad situation of the Chamber of Commerce of the United States, to the President and to Senator Newlands, chairman of the Senate Committee on Interstate Commerce, showing that the business interests of the country had endeavored to arouse some action on the part of Congress and the President long before the strike situation became acute. On August 12, Mr. Wheeler had telegraphed to President Wilson urging him to put the influence of the administration behind the joint resolution proposed by the chamber providing for an investigation of the entire subject of railway wages by the Interstate Commerce Commission. This resolution had been tabled by the Senate committee on August 4.

Theodore Roosevelt has also joined the ranks of the

critics of the Wilson-Adamson eight-hour law. In a speech at Battle Creek, Mich., last Saturday he said that although for the past 18 years he has supported the railway brotherhoods on every important issue and that although he believes in the eight-hour day as the general rule toward which we must strive, "We have seen in this country few things more discreditable to our representatives and more ominous for the future of the nation than the spectacle of the President and Congress of the United States being required to pass a certain bill before a certain hour at the dictation of certain men who sat in the gallery with their watches in their hands threatening ruin and disaster to the nation if there was the smallest failure to satisfy their demands.

"I believe in the eight-hour day as the general rule toward which we must strive," he continued, "but I recognize that special needs must be met in special industries, and that in all such cases there must be very careful consideration of all the conditions before final action is taken. In this case, however, the eight-hour day is not the issue. The issue is an increase of wages, given by law, without previous investigation or knowledge. The principle of the eight-hour day is not at issue and is adroitly invoked merely to cloak the real issue.

"The case at issue is pre-eminently one that comes in the category of those that can be settled only after careful investigation and full consideration of many important conflicting elements. I believe in the eight-hour day, on moral and sociological grounds, as being the ideal toward which we should strive. I believe in wages being just as high in any business as is compatible with square treatment to the other parties in interest. But if the government is to intervene in order to secure shorter hours and better wages it must do so only after full knowledge and not merely under the duress of threats."

James Wilson, formerly Secretary of Agriculture, has also issued a statement pointing out that the farmer will have to foot a large share of the bill for increase of railway operation due to the eight-hour law. It was an interesting coincidence that on the same day this statement was published, the Illinois Democratic State convention adopted a platform advocating an eight-hour day for all workers except those engaged in agricultural pursuits.

Even the Socialists are not satisfied with the eight-hour law. Allan L. Benson, nominee of the Socialist party for President, in a speech at Brooklyn on September 29 accused President Wilson as being an enemy of labor. Referring to some of the President's remarks about organized labor made while he was president of Princeton University, Mr. Benson said: "The only act of the President that can be construed as friendly to the workman is the passage of the eight-hour law and that, unfortunately, benefits only 400,000 railroad employees. If Mr. Wilson is such a good friend of labor, why didn't he do the same for all classes of workingmen?"

* * *

A PLAN FOR PREVENTING STRIKES

Judson C. Clements, of the Interstate Commerce Commission, has suggested a plan for preventing strikes on railroads or other public service corporations in an address before the annual meeting of the National Grain Dealers' Association at Baltimore on September 26. Stating that he was expressing only his personal views, Judge Clements said that an effective remedy for the dissensions between the railroads and their employees "will be found in the recognition of the principle that those who engage as employees in the public service of the transportation companies are just as much engaged in interstate commerce as are the companies themselves, and that such employees are affected in the same way and to the same extent as are the companies themselves, with a public interest that they can no more ignore than the companies."

Following this thought, Judge Clements continued: "I would suggest, that is, to write into the law a legally established obligation and duty upon every employee who seeks and accepts service with the transportation companies not to leave the service or combine with others to do so on account of any controversy thereafter arising concerning any change in the conditions of service or rates of compensation except upon due notice to be prescribed by statute, permitting a sufficient length of time for a fair and impartial investigation and determination of the matter in controversy, either by arbitration or by some duly constituted public tribunal."

* * *

A HISTORY OF ARBITRATION

The special report of the United States Board of Mediation and Conciliation on the effects of arbitration proceedings on rates of pay and working conditions of railway employees has just been printed as a Senate document No. 493, in accordance with the resolution adopted by the Senate in May. The report was called for by a resolution of the Senate, but the fact that it contains 608 closely printed pages may explain why it had not been thoroughly digested by the members of that body by the time the recent controversy with the trainmen became acute in August. The report, which was described in the *Railway Age Gazette* of July 28, 1916, page 153, gives a review of all arbitration proceedings held under the provisions of the federal law and also of four other cases arbitrated outside of the provisions of the law, giving a comparison of rates of pay and working conditions before and after the awards.

There is a black border around the cover, but it is not heavy enough to make clear whether or not it is intended as an obituary. A brief history of the events leading up to the passage of the Newlands arbitration law is given, referring to the fact that a strike vote of the conductors and trainmen on the eastern railroads had been taken, resulting in some 97 per cent of the employees voting to withdraw from the service of the railroads unless their demands were complied with. "The situation was an aggravated one," the report says, "and reached an acute stage early in July, 1913. The public mind was excited and the bill, which had been pending in Congress for some months, was, upon the advice of the President, promptly enacted into law to meet the emergency."

The later history of the President's methods of meeting similar emergencies is not included. The most recent of these emergencies occurred while the report was being printed, and while there is a review of the 1914 controversy with the western engineers and firemen, the simple statement that "on August 3, 1914, the matter was submitted to arbitration by agreement" is all there is to give credit to the President for having averted a national calamity by appealing to the patriotism of the railways to waive their demands.

PIPE MATERIAL.—Pipes and tubes are made of a great variety of materials, the most common being iron, steel, copper, brass, lead and tin. In recent years two or more metals have successfully been mechanically combined as a lining or covering for special purposes, aside from galvanizing, tinning or plating by the hot process or by electrically depositing one metal upon another.—*Power*.

ENGLAND'S PETROL SUPPLY.—The Government restriction of the petrol supply has considerably affected railway companies, in common with all commercial users of the spirit, and it has been necessary to curtail the Great Western passenger road motor car services to the extent of about 50 per cent. This has been effected by entirely suspending the services on several of the less important routes, and reducing to a minimum the number of trips on the remaining routes.—*The Engineer*.

Railway Fire Protection Association

The Third Annual Meeting. Reports on Automatic Fire Protection and on Fire Prevention in Grain Elevators

THE Railway Fire Protection Association held its third annual meeting in New York City, on Tuesday, Wednesday and Thursday of this week, with about 75 members and visitors present. The president of this association is F. H. Elmore (Southern Railway), who occupied the chair, and the secretary is C. B. Edwards (Seaboard Air Line.)

The president in his opening address congratulated the association on its rapid and substantial growth since its organization in May, 1913. There are now 95 members, and the number of railroads represented is 57. Progress has been made already in standardizing practices and great encouragement and satisfaction is found in the interchange of views. A handbook of recommended practices is in preparation, and the work promises to be of value to all railroads. The matter of statistics was touched upon, and attention was called to the need of showing in all cases the value of the property at risk. The association should now look forward to membership in and co-operation with the National Fire Protection Association. Every member should have as his ideal, not only the best service to his company, but also the assistance and education of property owners adjacent to the railroads. This last is being accomplished in increasing measure already.

The executive committee reported having held three meetings during the year. The receipts from dues and sales of printed matter, and from other sources, amounted to \$795; and the expenditures, including the printing of proceedings, \$275, and bulletins, \$151, amounted to \$632, leaving a balance of \$163.

The committee on resolutions, C. N. Rambo (N. & W.), chairman, reported 11 paragraphs in the nature of a platform or declaration of principles for a properly conducted railway fire prevention department. These may be summarized as follows: 1, education of men in fire prevention; 2, general recognition of the importance of fire resisting building construction; 3, proper sub-division of large buildings; proper appliances for fire prevention; drilling of employees; 4, rules and regulations requiring officers and employees to act correctly in all situations; 5, formation of fire prevention committees of executive officers; also division committees and local fire brigades; 6, rigid investigation to fix personal responsibility for fires; 7, employ experienced instructors to enforce cleanliness and good housekeeping; 8, vigorous enforcement of rules for dealing with explosives in freight houses and elsewhere; 9, have meetings of employees; 10, recognize the fact that fire insurance is not full compensation for losses; 11, co-operate in gathering statistical information.

These resolutions, after brief discussion, were unanimously adopted by the association.

E. R. Hardy, assistant manager of the New York Fire Insurance Exchange, gave an address in the nature of a welcome to New York City, and also as a representative of the National Fire Protection Association. Mr. Hardy spoke on some of the common difficulties in prevention work. Nearly all of these, however, he summarized under the head of "Getting Things Done." We have abundance of knowledge; how shall we get our good ideas put into effect? Quoting the colored preacher's recipe for an eloquent sermon—first to 'splain, next to expound, and lastly, to put in the rousements. Mr. Hardy said that the last of the three elements was a really essential one. This is the fire prevention officers' work. Railroad officers know what is needed, but they are

not roused. Eternal vigilance must be the every-day watchword. How rare it is to find even so simple a thing as a fire pail in good condition and fit for immediate use.

Addressing the members directly on their work, he said: "Your work is of a kind that cannot be measured in money, therefore you have reason to use the best diplomatic ability in dealing with the manager who demands a financial proof in justification of every new idea. Do not listen to rebuffs based on the hackneyed claim that 'the other roads are not doing it.' Remember, however, that you have the drawback, as compared with some departments that there is nothing dramatic about your work. The fireman who saves one life has more glory than innumerable men who do faithful duty 365 days in the year, but without glamour."

Though emphasizing the drawbacks, the speaker disclaimed any feeling of pessimism. Great progress is being made. In New York City, when the charter was adopted in 1898, building regulations now fully adopted were declared visionary. Limitations on the height of buildings, now accepted in New York, were only a few years ago thought impossible of accomplishment. Remember that standards and statistics and public agitation are not the whole thing; the thing to keep constantly in mind is the rousements.

FIRE PREVENTION IN GRAIN ELEVATORS

This was the subject of a report presented by Anson Murphy (Alabama Great Southern), which is given substantially in full below. This report was commended by numerous speakers for its full, detailed, and accurate information. Replying to questions, the chairman said that his reference to automatic feed spouts, contemplated a spout with a check valve, to be opened when the wind blows against it, and to close by gravity. The only need of such valve is to guard against the carelessness of the fireman in forgetting to disconnect the spout. The disposition of dust from elevators was the subject of a little discussion. An elevator using electric motive power, and having no engines, may have to have its dust carted off. At some elevators it is sold. It should be got out of the building as soon as practicable. The report was unanimously adopted.

REPORT OF COMMITTEE ON FIRE PREVENTION AND PROTECTION AT GRAIN ELEVATORS

In considering fire prevention and fire protection in elevators, all classes of elevators, from the small frame country elevator to the latest concrete terminal elevator, were taken into consideration. The hazards incident to the use of grain dryers cannot be eliminated or safe-guarded to such an extent that their introduction inside the elevator would not cause a material increase in the fire hazard. Their introduction inside the elevator should be prohibited.

The question of construction was not taken up by the committee as construction of the various classes of elevators is covered by standard requirements of the underwriters or rating bureaus.

In taking up the general cause of fires in elevators, it is hard to distinguish the greater of two sources of fires, faults in general house-keeping or in care of machinery.

In the first of the two, we have the ever present dust caused in the general run of business. The reasons that dust must be taken care of from a fire standpoint are many, one of which is the possibility of explosions. These explosions are not caused, as thought by some, by fire communicating with a pile of dust, as a pile of dust ignited in this way will sim-

ply smoulder and burn over the top of the pile, but the dust that accumulates on girders, spouts, ledges, and other projections is dangerous because if disturbed it mixes with the air and if this reaches an open light or fire then an explosion takes place which usually wrecks the building and sets fire to it. Dust should not be allowed to accumulate in any part of the building, but should be kept down to a minimum. All machinery, the journals, pulleys, drip pans, hoppers under elevator heads, the sinks at boots of elevators, the conveyors, should be kept as free from dust as possible. Dust should not be used to catch drippings of oil from journals or oil barrels.

The chaff from corn is a continual source of annoyance to elevator operators, as it is carried by the wind all over the building. In the small or country elevators, where corn is shelled, there is considerable litter caused by cobs, shucks and silk or hair, which causes a distinct hazard on account of the disposition and danger of fire from sparks, from passing locomotives or sparks from smoke stack, outside of the building and on the roof.

The storing of unused spouting, belting and old material about the building makes a ready receptacle for accumulating dust and rubbish. This material should be taken out of the building and stored in some outside building, wherever possible.

The care of old clothing and oily waste is a hazard which should not be overlooked, as the clothing is always full of dust and there is more or less oil on it from contact with machinery. This clothing should not be kept in the elevator when it is possible to keep it in some outside building. Whenever it is necessary, on account of conditions to keep clothing inside of the elevator it should be hung up in metal closets. All waste, after it is used, should be kept in standard self-closing waste cans. These cans should be small so that not over the accumulation of one day's work would be kept in the building. These cans should be emptied daily and the waste burned.

The machinery in elevators is somewhat different from machinery in other plants, as it is likely to be thrown out of line by the raising or lowering of the house caused by loading, unloading or transferring grain from one part of the house to the other. This is the case in the old fashioned elevator with the line shaft upwards of 100 ft. long where bins are constructed of cribbing and the cupola or texas is supported directly on the bins instead of being supported independently. This action of the house is likely to cause hot journals on account of the shafting being out of line or causing a friction between the journal and the collar on the shaft.

This can be overcome by placing a loose soft metal washer between the journal and the collar. Long shafts have been known to creep several inches either way in hot or cold weather on account of expansion or contraction. The heads of elevators or the pulleys or belts at the heads of elevators often become shifted, causing frictions. This can be overcome by regulating the bridge trees, always remembering that the belt will run to the high side of the pulley. The strut board under the head pulley should never be horizontal, but should always be made on an incline towards the down leg sufficiently tapering to be self cleaning. This is to prevent friction between the bottom of head pulley and grain or dust that falls from the buckets onto the strut board. The various methods of operating the head pulleys differ in a number of ways; the most dangerous method being what is known as the friction head, which consists of a pulley made of compressed paper with iron flanges placed at spaces of about 6 to 8 in. between the paper. The paper extends about $\frac{1}{4}$ in. above the iron flange on which the head pulley runs. This friction pulley is keyed rigidly to the main shaft and revolves all the time the machinery is running. To operate the elevator it is necessary by a lever and rope ex-

tending to the first floor, to lower the head pulley onto the friction pulley, so that the weight of pulley, belt and grain that is elevating rests on the friction pulley. The dangerous part of this method consists in the paper on the pulley becoming worn down to the iron flanges, causing a spark. An electric spark can be overcome at least temporarily by connecting a wire from the journal box of this pulley to that of the head pulley, but the proper course to pursue is to have the iron flanges turned down at least $\frac{1}{4}$ in. below the paper.

The elevators operated by a clutch direct, a gear wheel operated from a gear on a clutch pulley or friction clutch, rope or belt drive are not so dangerous, as these are all outside of the elevator heads, but the shifting ropes on these should extend to the first floor for quick handling to throw the elevator out of gear in case of a choke. Care should be taken to see that these levers are not fastened down in any way that would prevent their operation from the first floor.

A choke in an elevator leg is often the cause of fires as the main shaft continues to run but the head pulley, belt or friction clutch stops, thereby causing a friction, which may cause a fire unless it is relieved by the shifting ropes or the gearing gives way. A choke may be caused by the friction clutch, friction pulley or belt drive slipping, by overloading, by permitting the bucket belt to become loose, by permitting the scale or garner to fill up, the grain back up to the leg or to have an iron bar or board fall out of the car into the boot of the elevator.

At the bottom of the elevator we have a hazard that calls for very close inspection of the elevator boot. This boot is usually constructed of iron with slides at front and rear to remove chokes. Inside of this boot is the pulley and belt. The journals are on the outside of the boot, but in some cases enclosed in an outer cover or pocket to prevent the grain coming out around the journal. The best journal used at this point is what is known as the car journal box, as the pulley acts as an idler, the bearing is on the top, as on a railroad car, and there is room in the bottom of the box to pack hair or moss to hold the supply of oil. This pulley is regulated by rods extending to the first floor, so that when the belt stretches or shifts it can be regulated to prevent friction between the casing and belt or pulley. These journals are often oiled through pipes from the first floor, but this is bad practice as the pipe may become separated, the oil may not feed properly or the journal may be running hot from some cause and not be discovered until too late, as the oiler is not compelled to go down into the sink to do the oiling.

In cold climates the oil is likely to freeze in these pipes and cases have been noted where the oiler, instead of taking the pipe out and having it cleaned, would have a long rod or wire heated red hot and force it through the frozen oil in the pipe. This naturally adds a hazard on account of the method of oiling. A small pipe, say not over one foot in length, would be permissible, as this would provide a reservoir for oil that would hold sufficient oil to keep the journal in good condition for several hours.

The belt conveyors should all be above the floors and all bearings exposed. The screw conveyors should have loose tops, so that in case of a choke the top will raise, permitting the grain to come out on the floor. The shovel shaft, idlers and all journals should be accessible and above the floors. Where cleaning machines are used special care should be taken, as these run at high speed. These should be kept out of main building wherever possible, and where there is a fan attached this should be connected by metal piping to the outside, preferably to a separate house, or if arrangements are made for burning the dust under the boiler through an approved automatic feed spout. This dust should never be blown into a dust room inside the building or out of the ventilator on the roof.

Static electricity has been known to cause a number of fires in elevators, and it is possible that it has caused more

fires than it has been charged with. This is caused by belts slipping, either on account of the belts being overloaded or too loose on the pulleys. Static electricity can be overcome in a large degree by grounding the shafting or bearings. This should be done in all large elevators where the machinery is driven by belts and shafts, but it is unnecessary where elevators are driven direct by motors.

The windows of elevators should be covered with screening of No. 12 wire, $2\frac{1}{2}$ meshes to the inch, to prevent sparks from the outside entering. All windows should be kept open at all times while the elevator is in operation to permit all the dust possible to escape. In large elevators men should be employed constantly sweeping to prevent dust from accumulating. Where grain doors are coopered outside of the building they should be kept at least 50 ft. from the elevator.

The oiler is one of the most important men in the elevator for two reasons. The first is in the necessity for watchfulness and care of machinery to keep it from heating, and the other is because he must keep the journals and drip pans clean. The latter is easily done if the oiler will carry a piece of waste with him and wherever oil is allowed to run over wipe it up so there will be no oil on the outside of the journal to catch the flying dust and cause it to accumulate. If the oil is kept off the outside of journals and they are kept dry, the matter of cleaning is much easier.

An exhaust fan system for removing the dust is one of the later improvements for keeping the house clean. When a fan system is installed it should be connected above the pulley at the bottom of the elevator leg, at the top of the leg, on the side where the grain is discharged, and at the top of garners and scales. When a fan system is put in it is necessary to have the joints of elevator legs, top and bottom, and the scales and garners kept as tight as possible to get the best results.

Where the machinery is operated by electric motors, these motors should be of the enclosed or induction type, in order to get away from the sparking of the brushes, the starting box and the resistance coils, which are a constant source of danger on account of dust unless enclosed in a separate enclosure. This can be done where there is only one motor, but where there are more it is more or less troublesome.

The lighting in an elevator should be electric, installed according to the requirements of the National electric code. Where there is no electric current, electric flash lights should be used. Open gas jets, kerosene oil lamps, or gasoline lighting systems should never be permitted. Switchmen, while handling cars in the building, should be compelled to use electric flash lights or electric extension lights. In no event should they be permitted to use the ordinary switchmen's lantern.

Locomotives, while switching cars, should never, under any conditions, be permitted to enter building, on account of the possibility of fire from a spark from the stack or dropping fire from the ash pan. Railroad cars should not be left in the elevator or on tracks adjoining over night where it is possible to move them.

There are only two parts of an elevator that need heat, the foreman's office on the ground floor and the weigher's office on the scale floor. These should be heated by steam and all woodwork protected from the steam pipes. These pipes, where passing through the house, should be covered with approved covering to prevent dust settling on them. Stoves should not be permitted in an elevator under any consideration. The oil room, men's lunch room and carpenter shop should be heated by steam or electricity where possible.

It is recommended that the oil room, men's lunch room and carpenter shop be outside of the main building whenever possible.

Smoking should not be permitted in any part of the elevator. Men should not be permitted to carry matches into the building.

Where the wooden bin walls are covered with corrugated

iron special attention should be paid to the condition of this iron as an opening would make a ready receptacle for a spark to lodge in.

Lightning, according to statistics from various insurance companies, has been the cause of quite a number of fires in elevators. It is not necessary to speak about this hazard, as it is general in all classes of buildings.

Safeguards Recommended for Dryers and Sulphur Bleachers.—Notwithstanding the fact that the grain and foreign matter mixed therewith are the only materials of a combustible nature contained in a building constructed in accordance with the underwriters' regulations, it is believed that a fan driven fire in this dust and grain would result in considerable damage to the apparatus and possibly to the structure. For this reason the following recommendations for safeguards are appended:

An adequate system of automatic steam jets should be provided for extinguishing fire in the apparatus. High degree automatic sprinklers can be arranged so as to automatically fill the apparatus with steam in cases of fire. The steam pipes for sprinklers and all other parts of the apparatus should be so arranged that all condensation can be removed during cold weather and when the dryer is not in use.

If the fan is driven by an independent engine a system of fusible links should be so arranged that the fusing of any link would close a shut-off valve on the steam connection supplying the engine. Attachments for automatically stopping the fan, when the power is from other sources, should be provided if practicable.

An automatic fire alarm system should be installed, placing alarms in the engine room and at other points if desirable.

A thorough system of automatic sprinklers should be installed when the dryer is used in connection with the sprinklered elevator.

When installed outside the elevator and in accordance with the underwriters' rules and requirements, grain dryers even of approved construction are considered as adding to the fire hazard of the elevators in connection with which they are used, according to the construction of the dryer building, and the distance which they are removed from the elevator.

Sulphur Bleachers.—The sulphur burning furnace should be set at least 25 ft. distant from the elevator and be of fireproof construction. When necessary to get the furnace closer than 25 ft., the fume pipe should be not less than 25 ft. in length.

The same regulations should also apply to sulphur bleachers as to grain dryers in reference to communication, but the enclosure for burning sulphur should be so arranged with division walls that in case of a choke in the conveyor after passing the bleacher the grain cannot back up to the pan in which the sulphur is burned.

Fire Protection.—The best means of fire protection discovered, up to the present time, is a standard installation of automatic sprinklers; although the automatic sprinkler is not as effective in an elevator as in other classes of buildings, as it is necessary to have a dry system on account of cold weather; and when a sprinkler head is released on account of fire the air expelled from this opening blows the dust about in such a manner that it may cause an explosion. The standards of the underwriters require inside stand pipes with hose on the various floors sufficient to reach all parts of the buildings. There is a question whether the hose at the various outlets should be standard $2\frac{1}{2}$ in. fire hose or a smaller size, either $1\frac{1}{2}$ in. or 2 in. hose. It is a well known fact that one man cannot handle a $2\frac{1}{2}$ in. hose if it has any pressure on it. Therefore, it is reasonable to say that a $1\frac{1}{2}$ in. hose with nozzles having $\frac{1}{2}$ -in. openings would be the most serviceable. These inside stand pipes

should be supplied from a pump or pumps in the boiler house of sufficient capacity according to the size of the hose. Where water can be obtained from city mains, with sufficient pressure to reach the top of the building, a by-pass around the pumps should be provided so that in case of the elevator being shut down or no steam on the boilers this water could be used. Where pumps are provided, steam pressure sufficient to operate the pump should be maintained at all times. These stand pipes should be arranged for draining, so that in winter there will be no water on the stand pipes as the buildings are open and the water in the pipes would be subject to freezing. Water barrels with buckets should be placed on all floors of the elevators, apportioned about one to each leg in a regular elevator or one to each 500 sq. ft. in warehouses or other buildings.

Three-gallon fire extinguishers are advisable as additional protection, but these would have to be kept in the engine room or offices in the winter unless of the non-freezing type. In elevators where electric motors are used carbon-tetra-chloride extinguishers should be provided. Either these extinguishers or sand in buckets should be provided for oil rooms. Axes and pike poles should be provided on all floors. Signal alarms from all hose outlets to the engine room should be arranged for turning in fire alarms or notifying the engineer to start the fire pump.

Night and Sunday watchman with central station signals or a watchman's clock for reporting at all times when the elevator is not in operation should be provided. Outside fire escape ladders and stand pipes should also be provided.

Electric journal alarms from journals to an indicator in engine room which operates in case of a journal getting hot are recommended, and when installed should be tested daily.

In summing up the various hazards, we have tried to stay on the line of hazards peculiar to elevators and have not dealt with the common hazards, which are usual to all classes of buildings, such as exposure fires, stoves, stove pipes, flues, incendiary and other miscellaneous causes.

AUTOMATIC FIRE PROTECTION

C. N. Rambo (N. & W.) read a paper on automatic fire protection. He gave a succinct descriptive account of automatic sprinklers. The wet pipe, constantly filled with water under pressure, is the most desirable where practicable; but in cold climates the dry system—pipes filled with air, to be flooded, when necessary, is in common use. With this system sometimes there is two or three minutes or more delay in getting water on the fire after the heat has acted on the fusible link. The significant fact for railway officers to bear in mind is that private industries, by the hundred, have used automatic sprinklers for 20 years past, and have found them a good investment. There would seem to be no reason why every large railroad shop and every large terminal warehouse should not have this protection. It is a mistake to assume that the sprinklers are useful only in rooms with low ceilings. They have acted with success in shops where the pipes are 30 feet above the floor. On a certain group of railroad shops, in a period of 10 years, the fire losses amounted to 27½ cents per \$100 of insured value; in a certain other group of shops, not railroads', during the same time—shops equipped with sprinklers—the losses were 3 cents per \$100 valuation.

The National Fire Protection Association reported for the year 1915, concerning the records of 1,340 fires in buildings equipped with automatic sprinklers, that 984 fires were extinguished, 305 were held in check and in 51 cases the action of the apparatus was reported as unsatisfactory. In 19 years the percentage of satisfactory operation has been 64.5; but this last year it was 73.4. Mr. Rambo named the causes of failure in a dozen prominent instances.

Out of the 1,340 fires above referred to, 450 were extinguished by water from one sprinkler and 52 per cent of the whole number were put out by one or two. Sprinklers usually are designed to flood a space 10 ft. square.

Statistics of fires in 5,000 properly equipped factories, covering a period of 30 years, show that only five lives were lost; the number of persons employed in these factories aggregated 2,500,000.

Following the reading of the paper, there was a discussion concerning the usefulness of automatic sprinklers in round-houses. The prevailing view was that the losses in buildings of this class are so small, that the expense is not warranted. If sprinklers are used, it is necessary to guard against corrosion from gases by the use of wax paints. A roundhouse on the Alabama Great Southern has been thus painted for a year and thus far paint of this kind has proved satisfactory.

This discussion brought out the experiences of several members. B. S. Mace (B. & O.) has sprinklers, the dry system, in two warehouses at Locust Point, Baltimore, in which all sorts of commodities are handled, which give entire satisfaction. There have been some small losses from leakage. Leakage insurance is carried. Pipes are boxed where necessary, to guard against freezing.

F. C. Mott: The dry system is generally used in warehouses around New York harbor. The mains are boxed, for cold weather, where necessary. At the Bush Terminal the large warehouses have provision for a master curtain outside the building to protect against fires on boats. The New York Dock Company formerly had rather frequent fires; now, with sprinklers, fires are few and small. This company's piers are of wood with corrugated iron sides and roofs. Curtain boards confine hot air in the upper part under the roof. On large piers the space is divided by such curtains both longitudinally and transversely. Replying to a question Mr. Mott said he knew of no trouble from salt air. All good kinds of sprinkler heads are immune to this.

Anson Murphy (A. G. S.): Daily inspections and reports of conditions are an important essential with automatic sprinklers. The pressure of the water, the condition of the air and the temperature of the valve box should be noted.

P. Hevener (Rock Island) spoke a word in favor of the "flushing" system for cooling stations (water to be turned on by the attendant). Replying to questions, he recognized the superiority of automatic sprinklers; but the other system has served well where it was impossible to get the necessary appropriation for sprinklers.

Wm. McGrath (D. L. & W.) finds the flushing apparatus satisfactory. Mr. Brooks (Ill. Cent.) at a 250-ton coal chute installed sprinklers at a cost of \$850.

On Tuesday afternoon the members went to Hoboken, N. J., to inspect the docks and terminals of the Delaware, Lackawanna & Western, and witnessed an exhibition of the automatic fire alarm system of the Metropolitan Electric Protection Company (New York), installed there.

On Wednesday the Association held a long informal discussion on the duties of inspectors, and listened to the reports of the Committee on Locomotive Spark and Ash-pan hazards, presented by W. F. Kaderly (G. S. & F.), and on statistics, presented by F. B. Berry (So. Ry.).

RAIL FAILURES AND TEMPERATURE

The accompanying diagrams show a comparison between rail failures and temperature as obtained from the records of the Southern Pacific for the years 1912 to 1915, inclusive. One diagram shows the number of failures per month per 100 miles of track for different sections of rail—i. e., 75-lb. C. S., 80-lb. A. S. C. E., 90-lb. C. S. and A. S. C. E., and 90-lb. A. R. A., series A. The other diagram shows the sums of the number of failures by months for the four years. On the diagram to the left the mean monthly temperature is plotted in an inverted position; that is, with the temperature increasing downward, and the corresponding average curve is given on the diagram to the right.

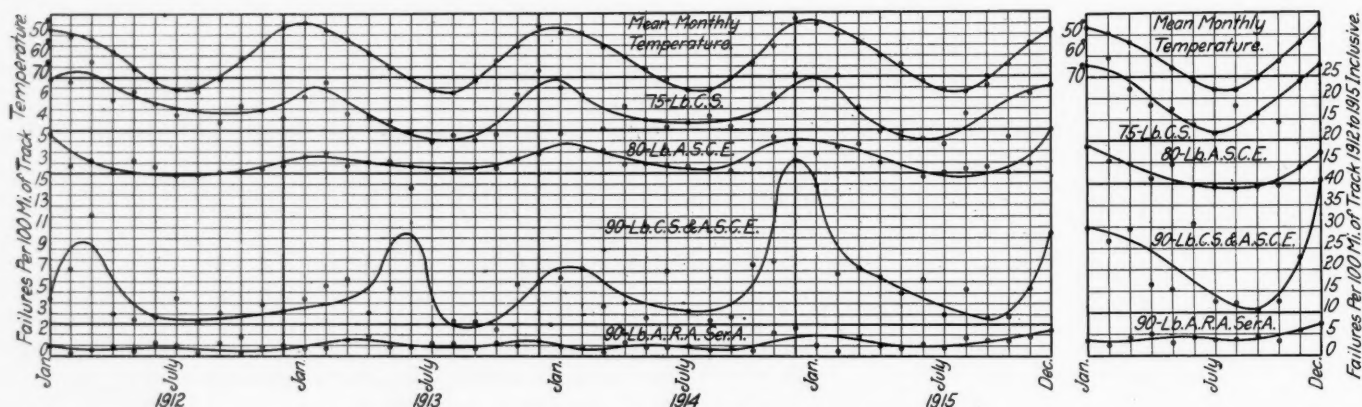
It will be noted from a study of these diagrams that the failures of the 75-lb. and 80-lb. rails followed the tempera-

ture very closely. The same is true to a lesser extent for the 90-lb. rail, although the results were erratic in 1913 because of the large number of failures in June of that year. In the case of the 90-lb. A. R. A. type A rails the relation between temperature and failures is scarcely apparent.

Although the diagrams indicate a definite relationship for three sections of rail, it is interesting to note that for the same section under similar conditions of traffic and mainte-

at the creek. This well was dug in 1855 and was used for drinking water and shop supply for over 40 years. A well was drilled at the shops in 1857 to a depth of 1,500 ft. in an effort to secure artesian water, but with no success.

In 1859 the consumption of water had increased to such an extent that it was found necessary to build a dam across Crooked creek, forming a reservoir for the storage of water during the dry seasons. A 300,000-gal. reservoir was also



Rail Failures for Four Years in Relation to Temperature

nance, the maximum number of failures does not occur on those portions of the system on which the greatest range of temperatures occurs or on which the lowest temperatures obtain. We are indebted to John D. Isaacs, consulting engineer, Southern Pacific, for the above information.

THE HISTORY OF A WATER STATION

By C. R. Knowles

General Superintendent of Water Service, Illinois Central,
Chicago, Ill.

A compilation of the figures showing the consumption of water at Centralia, Ill., for 23 years brings to mind the enormous increase in the consumption of water by the railroads within the last quarter of a century. According to these figures, the consumption has practically doubled every 10 years. The amount used at Centralia in 1895 was 72,000,000 gal., while in 1905 it had increased to 141,404,000 gal., and in 1915 to 238,630,000 gal. It may be said in passing that the consumption in 1915 was 42,000,000 gal. less than that in 1914, because of a campaign against water waste. Except for this the amount used in 1915 would have been fully double that of 1905. While these figures as to the rate of increase may not apply to outlying stations they would certainly appear to apply to main line terminals. They are taken from meter readings throughout the entire period.

The first water supply at Centralia was secured from Shop creek and was barely sufficient for the few engines running into Centralia at the time the road was constructed in 1852. The additions to the motive power were very rapid during the first few years after the road was built and the demand for water soon outgrew the supply from the creek. A new water station was therefore established about two miles north of Centralia early in 1855 at a stream known as Crooked creek. The supply was apparently ample and there being but little contamination, the quality of the water was fairly good. This pumping station was operated by horse power, the first pump being operated by one horse, and later as the consumption increased by two horses. The first steam plant was not erected until about 1858. The tanks were located at the Crooked creek station and it was necessary to bring the engines out from Centralia for water. The supply for the shops at Centralia was secured from a well in the roundhouse, 12 ft. in diameter and 40 ft. deep. Locomotives were also supplied from this well when the supply was low

constructed at the shops and walled with stone and the water station was enlarged and rebuilt, involving a $2\frac{1}{4}$ -mile pipe line of 4-in. cast iron pipe from the creek to the shops.

As the old pumping station was destroyed by fire in 1865, it was replaced by a brick pump house, a Weldon pump was installed and two 40,000-gal. tanks were erected. A year later a second pump was added. The four-inch pipe became inadequate for the supply in 1867. It was found heavily incrustated and was cleaned and part of the line was relaid with cleanout boxes every 100 ft. This proved only a temporary relief and 5,000 ft. of four-inch pipe was taken up and relaid with eight-inch pipe in 1868. This pipe is cast iron and is still in service after being in the ground 48 years.

The history of the station for the next few years is incomplete, but it seems that the old Weldon pumps remained in service until the early eighties, when more modern pumping machinery was installed. The pumping equipment in 1885 consisted of a locomotive boiler and two 4-in. by 7-in. by 10-in. Worthington duplex pumps.

In 1891 a contract was executed with the city of Centralia covering the joint use of Crooked creek reservoir. The consumption of water by the city and railroad outgrew the pumping equipment in 1903 when the city constructed its own plant; shortly after this Crooked creek became inadequate for the demand, and it acquired a reputation for pollution.

In 1908 the supply failed and the city was practically out of water for over three months, the shortage of water causing an enormous amount of trouble and expense to the railroad. Temporary stations were established at several points from 2 to 81 miles from Centralia, and water was hauled in trains consisting of 20 large tank cars with a capacity each of from 8,000 to 10,000 gal., each train hauling about 200,000 gal. of water. In spite of the most rigid economy it required at least two trains a day to maintain the supply. It was necessary to haul water from October 30, 1908, until February 6, 1909, during which time 4,450 cars of water were handled at a cost of \$16,993.41.

Because of the total failure of the water supply the city of Centralia in 1909 invested \$158,000 in a new water supply. A new 1,000,000,000-gal. reservoir was formed by constructing a 650-ft. dam across a valley about 8 miles east of and upstream from the Crooked creek pumping station. The submerged area is approximately 250 acres and the watershed is about 8 square miles. The water flows by gravity through a 20-in. wood stave main to the pumping station, located near the original site of Crooked creek station.

General News Department

The Brotherhood of Locomotive Firemen and Enginemen have leased quarters in the Guardian building, Cleveland, Ohio, and are moving their headquarters there from Peoria, Ill.

A committee of railway mail traffic managers and lawyers conferred with the Second Assistant Postmaster General at Washington last Wednesday to discuss the details connected with the proposed change of railway mail pay, from the weight to the space basis except for "closed pouch service" on November 1. The Postmaster General's interpretation of the new law was explained.

The legislative committee of the Brotherhood of Locomotive Firemen and Enginemen of Illinois met last week at Springfield, Ill., to discuss legislation it expects the next session of the Illinois legislature to consider. The brotherhood will seek the enactment of an anti-injunction law, a law permitting railroad men away from their homes to vote, an eight-hour day for men and women in all industries, and a uniform school text-book law.

A fine new manual training school costing over \$3,000,000 has just been dedicated at Pullman, Ill. It is a gift of the late George M. Pullman, founder of the Pullman Car Company. The school is to be opened to the children of Pullman and the children of Pullman employees in general, but the line will not be drawn so as to exclude attendance from other neighborhoods. The school will accommodate 500 pupils. The buildings, athletic fields, gardens, lagoons, etc., cover 40 acres of ground.

Exports of railroad supplies from the United States for the seven months ending with July amounted to \$36,215,000, as compared with \$9,465,000 for the same period of the preceding year, according to the statement issued by the Department of Commerce. Railway cars increased in value from \$1,767,000 to \$18,093,000, largely because of the purchases made by the Russian Government for the equipment of its new lines, which have been rushed during the war. Locomotives numbered 363, of which 111 went to Europe, 39 to Canada, 70 to Cuba, 21 to Mexico, and 72 to Russia.

Eighty-five per cent of the 40,000 members of the six railway shopmen's unions employed on 18 western railways voted in favor of rejecting the compromise proposals of the railroads to their demands for an eight-hour day and to a wage increase of five cents per hour. The conference of union representatives which canvassed the referendum vote held its closing session at Kansas City, Mo., on October 1. The delegates returned to their respective roads where further negotiations will be carried on between the unions and the carriers. Seventy-five per cent of the union men are employed in stationary shop work and the other 25 per cent on repairs to rolling stock.

To emphasize what can be accomplished through the exercise of proper care by railroad employees and the public, the Nashville, Chattanooga & St. Louis has set aside October 9 as "Fire and Accident Prevention Day." Through its safety department the road has issued instructions to all employees to endeavor to make that day one free from accidents or fires insofar as it may lie within their power. Special stationery has been used by the several departments of the road for some time on which accidents and fire statistics have been printed in red ink, and in this manner the attention of thousands has been directed to the day and its object. Under the caption, "One Day for Humanity," is an appeal to every employee to be particularly careful and to ask others to do likewise. The nation's fire toll is 5,000 lives a year, a fire loss of \$500 per minute, 10,000 persons workless and 20,000 homeless. The accident toll a year is 35,000 deaths and 2,000,000 injuries, to say nothing of the human suffering and financial loss involved. Persons who must use railroad property on October 9 are urged to be unusually careful, especially at crossings where so many accidents occur.

Congressional legislation making federal control of the railroads superior to that by the individual states was asked in resolutions adopted by the savings banks' section of American Bankers' Association, which held its annual convention at Kansas City, Mo., last week. The resolutions point to the fact that less new mileage was built last year than in any year in the preceding half century with more lines in bankruptcy than at any other time in the history of the country, and declare that railroad improvements were arrested because of the "costly conflicts" arising between the Interstate Commerce Commission and the individual state commissions. They further declare that railroad growth has been impaired because of "investment hesitancy," which has arisen in consequence of "the confusion, waste and inefficiency of railroad supervision by Congress and 48 states." The savings banks of the United States are said to hold more than \$900,000,000 in railroad stocks, which represent the deposits of more than 10,000,000 people. The resolutions ask Congress to grant a hearing to a committee of the savings banks' section before passing any further railroad legislation.

M. H. Smith Must Answer

Judge Stafford, in the Supreme Court of the District of Columbia, has issued an order directing President Milton H. Smith and other officers of the Louisville & Nashville to answer the questions of J. W. Folk, counsel for the Interstate Commerce Commission, regarding their political activities and contributions. Judge Stafford rules that they must answer, not because the questions involve the political activity of carriers, but because they involve expenditure of funds, and so affect the question of reasonableness of rates and also affect methods of accounting.

Illinois Central Appeals to Motorists

T. J. Foley, general manager of the Illinois Central and the Yazoo & Mississippi Valley, has addressed an appeal to those who drive or ride in automobiles to "Stop, look and listen" at highway crossings. According to Mr. Foley, during the ninety days preceding September 26, 18 persons were killed and 36 persons injured in automobile grade crossing accidents on the Illinois Central. Mr. Foley states further that statistics prove that crossings which are used extensively, and therefore are considered the most dangerous, are really the safest. The great majority of accidents occur at outlying crossings which are the least used. He calls attention to the fact that there are 8,000 grade crossings on the Illinois Central system, and that to separate the grade at these crossings would cost \$215,408,020, which is nearly twice as much as the capital stock of the company.

A. S. M. E. Railroad Meeting

The railroad committee of the American Society of Mechanical Engineers has arranged a most attractive program for the meeting of the railroad section, which will be held during the annual meeting of the society at New York early in December. It is planned to hold the railroad section meeting on Friday morning, December 8, with an afternoon session if it should prove necessary. The program will include papers on Mechanical Design of Electric Locomotives, by A. F. Batchelder, railway department, General Electric Company; Clasp Brakes, by Thomas L. Burton, of the American Brake Company, St. Louis; and Pulverized Fuel for Locomotives, by J. E. Muhlfeld, president of the Locomotive Pulverized Fuel Company.

Association of Railway Electrical Engineers

The ninth annual convention of the Association of Railway Electrical Engineers will be held at the LaSalle hotel, Chicago, Ill., October 31 to November 3, inclusive.

MEETINGS AND CONVENTIONS

The following list gives names of secretaries, dates of next or regular meetings and places of meetings.

- AIR BRAKE ASSOCIATION.**—F. M. Nellis, Room 3014, 165 Broadway, New York City.
- AMERICAN ASSOCIATION OF DEMURRAGE OFFICERS.**—F. A. Pontious, 455 Grand Central Station, Chicago. Next meeting, January, 1917, New York.
- AMERICAN ASSOCIATION OF DINING CAR SUPERINTENDENTS.**—H. C. Boardman, D. L. & W., Hoboken, N. J. Annual convention, October 19-21, 1916, New Orleans, La.
- AMERICAN ASSOCIATION OF FREIGHT AGENTS.**—R. O. Wells, Illinois Central, East St. Louis, Ill. Next meeting, June, 1917, Denver.
- AMERICAN ASSOCIATION OF PASSENGER TRAFFIC OFFICERS.**—W. C. Hope, C. R. R. of N. J., 143 Liberty St., New York. Annual meeting, October 17, 18, 1916, New Willard Hotel, Washington, D. C.
- AMERICAN ASSOCIATION OF RAILROAD SUPERINTENDENTS.**—E. H. Harman, Room 101, Union Station, St. Louis, Mo.
- AMERICAN ELECTRIC RAILWAY ASSOCIATION.**—E. B. Burritt, 8 W. 40th St., New York. Annual convention, October 9-13, 1916, Atlantic City, N. J.
- AMERICAN ELECTRIC RAILWAY MANUFACTURERS' ASSOCIATION.**—H. G. McConaughy, 165 Broadway, New York. Annual convention, October 9-13, 1916, Atlantic City, N. J.
- AMERICAN RAILROAD MASTER TINNERS', COPPERSMITHS' AND PIPEFITTERS' ASSOCIATION.**—W. E. Jones, C. & N. W., 3814 Fulton St., Chicago.
- AMERICAN RAILWAY ASSOCIATION.**—J. E. Fairbanks, general secretary, 75 Church St., New York. Next meeting, November 15, 1916, Denver, Colo.
- AMERICAN RAILWAY BRIDGE AND BUILDING ASSOCIATION.**—C. A. Lichty, C. & N. W., Chicago. Next convention, October 17-19, 1916, New Orleans, La.
- AMERICAN RAILWAY ENGINEERING ASSOCIATION.**—E. H. Fritch, 900 S. Michigan Ave., Chicago. Next convention, March 20-22, 1917, Chicago.
- AMERICAN RAILWAY MASTER MECHANICS' ASSOCIATION.**—J. W. Taylor, 1112 Karpen Bldg., Chicago. Next meeting, June, 1917.
- AMERICAN RAILWAY TOOL FOREMEN'S ASSOCIATION.**—Owen D. Kinsey, Illinois Central, Chicago.
- AMERICAN SOCIETY FOR TESTING MATERIALS.**—Prof. E. Marburg, University of Pennsylvania, Philadelphia, Pa.
- AMERICAN SOCIETY OF CIVIL ENGINEERS.**—Chas. Warren Hunt, 220 W. 57th St., New York. Regular meetings, 1st and 3d Wednesday in month, except July and August, 220 W. 57th St., New York.
- AMERICAN SOCIETY OF MECHANICAL ENGINEERS.**—Calvin W. Rice, 29 W. 39th St., New York.
- AMERICAN WOOD PRESERVERS' ASSOCIATION.**—F. J. Angier, Supt. Timber Preservation, B. & O., Mt. Royal Sta., Baltimore, Md. Next convention, January 23-25, 1917, New York.
- ASSOCIATION OF AMERICAN RAILWAY ACCOUNTING OFFICERS.**—E. R. Woodson, Rooms 1116-8 Woodward Bldg., Washington, D. C. Annual meeting, May 30, 1917, San Francisco, Cal.
- ASSOCIATION OF MANUFACTURERS OF CHILLED CAR WHEELS.**—George W. Lyndon, 1214 McCormick Bldg., Chicago. Semi-annual meeting with Master Car Builders' Association. Annual convention, October 10, 1916, Waldorf-Astoria, New York.
- ASSOCIATION OF RAILWAY CLAIM AGENTS.**—Willis H. Failing, Terminal Station, Central of New Jersey, Jersey City, N. J. Next meeting, May, 1917, Louisville, Ky.
- ASSOCIATION OF RAILWAY ELECTRICAL ENGINEERS.**—Jos. A. Andreucetti, C. & N. W., Room 411, C. & N. W. Sta., Chicago.
- ASSOCIATION OF RAILWAY TELEGRAPH SUPERINTENDENTS.**—W. L. Connely, Superintendent of Telegraph, Indiana Harbor Belt, Gibson, Ind.
- ASSOCIATION OF TRANSPORTATION AND CAR ACCOUNTING OFFICERS.**—G. F. Conrad, 75 Church St., New York. Next meeting, December 12-13, 1916, Atlanta, Ga.
- BRIDGE AND BUILDING SUPPLY MEN'S ASSOCIATION.**—P. C. Jacobs, H. W. Johns-Manville Co., Chicago. Meetings with American Railway Bridge and Building Association.
- CANADIAN RAILWAY CLUB.**—James Powell, Grand Trunk, P. O. Box 7, St. Lambert (near Montreal), Que. Regular meetings, 2d Tuesday in month, except June, July and August, Windsor Hotel, Montreal, Que.
- CANADIAN SOCIETY OF CIVIL ENGINEERS.**—Clement H. McLeod, 176 Mansfield St., Montreal, Que. Regular meetings, 1st Thursday in October, November, December, February, March and April. Annual meeting, January, Montreal.
- CAR FOREMEN'S ASSOCIATION OF CHICAGO.**—Aaron Kline, 841 Lawlor Ave., Chicago. Regular meetings, 2d Monday in month, except June, July and August, Hotel La Salle, Chicago.
- CENTRAL RAILWAY CLUB.**—H. D. Vought, 95 Liberty St., New York. Regular meetings, 2d Friday in January, May, September and November. Annual dinner, 2d Thursday in March, Hotel Statler, Buffalo, N. Y.
- CHIEF INTERCHANGE CAR INSPECTORS' AND CAR FOREMEN'S ASSOCIATION.**—W. R. McMunn, New York Central, Albany, N. Y.
- CINCINNATI RAILWAY CLUB.**—H. Boutet, Chief Interchange Inspector, Cin'ti Rys., 101 Carew Bldg., Cincinnati. Regular meetings, 2d Tuesday, February, May, September and November, Hotel Sinton, Cincinnati.
- ENGINEERS' SOCIETY OF WESTERN PENNSYLVANIA.**—Elmer K. Hiles, 2511 Oliver Bldg., Pittsburgh, Pa. Regular meetings, 1st and 3d Tuesday, Pittsburgh, Pa.
- FREIGHT CLAIM ASSOCIATION.**—Warren P. Taylor, Traffic Manager, R. F. & P., Richmond, Va. Annual convention, June 19, 1917, Banff, Alberta.
- GENERAL SUPERINTENDENTS' ASSOCIATION OF CHICAGO.**—A. M. Hunter, 321 Grand Central Station, Chicago. Regular meetings, Wednesday, preceding 3d Thursday in month, Room 1856, Transportation Bldg., Chicago.
- INTERNATIONAL RAILROAD MASTER BLACKSMITHS' ASSOCIATION.**—A. L. Woodworth, C. H. & D., Lima, Ohio. Next annual meeting, August, 1917, Chicago.
- INTERNATIONAL RAILWAY FUEL ASSOCIATION.**—J. G. Crawford, C. B. & Q. R. R., 702 E. 51st St., Chicago. Next meeting, May, 1917, Chicago.
- INTERNATIONAL RAILWAY GENERAL FOREMEN'S ASSOCIATION.**—Wm. Hall, 1126 W. Broadway, Winona, Minn.
- MAINTENANCE OF WAY AND MASTER PAINTERS' ASSOCIATION OF THE UNITED STATES AND CANADA.**—F. W. Hager, Fort Worth & Denver City, Fort Worth, Tex. Next convention, October 17-19, 1916, Philadelphia, Pa.
- MASTER BOILER MAKERS' ASSOCIATION.**—Harry D. Vought, 95 Liberty St., New York.
- MASTER CAR AND LOCOMOTIVE PAINTERS' ASSOCIATION OF THE UNITED STATES AND CANADA.**—A. P. Dane, B. & M., Reading, Mass. Next annual meeting, September, 1917, Chicago.
- MASTER CAR BUILDERS' ASSOCIATION.**—J. W. Taylor, 1112 Karpen Bldg., Chicago. Next meeting, June, 1917.
- NATIONAL RAILWAY APPLIANCE ASSOCIATION.**—C. W. Kelly, 349 Peoples Gas Bldg., Chicago. Next convention, March, 1917, Chicago.
- NEW ENGLAND RAILROAD CLUB.**—W. E. Cade, Jr., 683 Atlantic Ave., Boston, Mass. Regular meeting, 2d Tuesday in month, except June, July, August and September, Boston.
- NEW YORK RAILROAD CLUB.**—Harry D. Vought, 95 Liberty St., New York. Regular meeting, 3d Friday in month, except June, July and August, 29 W. 39th St., New York.
- NIAGARA FRONTIER CAR MEN'S ASSOCIATION.**—E. N. Frankenberger, 623 Brisbane Bldg., Buffalo, N. Y. Meetings, 3d Wednesday in month, New York Telephone Bldg., Buffalo, N. Y.
- PEORIA ASSOCIATION OF RAILROAD OFFICERS.**—F. C. Stewart, 410 Masonic Temple Bldg., Peoria, Ill. Regular meetings, 3d Thursday in month, Jefferson Hotel, Peoria.
- RAILROAD CLUB OF KANSAS CITY.**—Claude Manlove, 1008 Walnut St., Kansas City, Mo. Regular meetings, 3d Saturday in month, Kansas City.
- RAILWAY BUSINESS ASSOCIATION.**—Frank W. Noxon, 30 Church St., New York. Annual meeting, December, 1916, Waldorf-Astoria Hotel, New York.
- RAILWAY CLUB OF PITTSBURGH.**—J. B. Anderson, Room 207, P. R. R. Sta., Pittsburgh, Pa. Regular meetings, 4th Friday in month, except June, July and August, Monongahela House, Pittsburgh.
- RAILWAY DEVELOPMENT ASSOCIATION.**—D. C. Welty, Commissioner of Agriculture, St. L., Iron Mt. & So., 1047 Railway Exchange Bldg., St. Louis. Next semi-annual meeting, November 9-10, 1916, La Salle Hotel, Chicago. Annual meeting, May 9-11, 1917, Louisville, Ky.
- RAILWAY ELECTRICAL SUPPLY MANUFACTURERS' ASSOCIATION.**—J. Scribner, 1063 Monadnock Block, Chicago. Meetings with Association of Railway Electrical Engineers.
- RAILWAY FIRE PROTECTION ASSOCIATION.**—C. B. Edwards, Office of the President's Assistant, Seaboard Air Line, Norfolk, Va.
- RAILWAY REAL ESTATE ASSOCIATION.**—Frank C. Irvine, 1125 Pennsylvania Station, Pittsburgh, Pa. Annual meeting, October 10, 1916, Chicago.
- RAILWAY SIGNAL ASSOCIATION.**—C. C. Rosenberg, Myers Bldg., Bethlehem, Pa. Next annual convention, September, 1917, Atlantic City, N. J.
- RAILWAY STOREKEEPERS' ASSOCIATION.**—J. P. Murphy, N. Y. C. R. R., Box C, Collinwood, Ohio.
- RAILWAY SUPPLY MANUFACTURERS' ASSOCIATION.**—J. D. Conway, 2136 Oliver Bldg., Pittsburgh, Pa. Meetings with Master Car Builders' and Master Mechanics' Associations.
- RAILWAY TELEGRAPH AND TELEPHONE APPLIANCE ASSOCIATION.**—G. A. Nelson, 50 Church St., New York. Meetings with Association of Railway Telegraph Superintendents.
- RICHMOND RAILROAD CLUB.**—F. O. Robinson, C. & O., Richmond, Va. Regular meetings, 2d Monday in month, except June, July and August.
- ROADMASTERS' AND MAINTENANCE OF WAY ASSOCIATION.**—P. J. McAndrews, C. & N. W., Sterling, Ill. Next annual convention, September, 1917, Chicago.
- ST. LOUIS RAILWAY CLUB.**—B. W. Frauenthal, Union Station, St. Louis, Mo. Regular meetings, 2d Friday in month, except June, July and August, St. Louis.
- SALT LAKE TRANSPORTATION CLUB.**—R. E. Rowland, David Keith Bldg., Salt Lake City, Utah. Regular meetings, 1st Saturday of each month, Salt Lake City.
- SIGNAL APPLIANCE ASSOCIATION.**—F. W. Edmunds, 3868 Park Ave., New York. Meetings with annual convention Railway Signal Association.
- SOCIETY OF RAILWAY FINANCIAL OFFICERS.**—L. W. Cox, 1217 Commercial Trust Bldg., Philadelphia, Pa. Annual meeting, October 18-20, 1916, Hotel Raleigh, Washington, D. C.
- SOUTHERN ASSOCIATION OF CAR SERVICE OFFICERS.**—E. W. Sandwich, A. & W. P. R. R., Atlanta, Ga. Next meeting, October 19, 1916, Birmingham, Ala.
- SOUTHERN & SOUTHWESTERN RAILWAY CLUB.**—A. J. Merrill, Grant Bldg., Atlanta, Ga. Regular meetings, 3d Thursday, January, March, May, July, September, November, 10 a. m., Piedmont Hotel, Atlanta.
- TOLEDO TRANSPORTATION CLUB.**—Harry S. Fox, Toledo, Ohio. Regular meetings, 1st Saturday in month, Boody House, Toledo.
- TRACK SUPPLY ASSOCIATION.**—W. C. Kidd, Ramapo Iron Works, Hillburn, N. Y. Meetings with Roadmasters' and Maintenance of Way Association.
- TRAFFIC CLUB OF CHICAGO.**—W. H. Wharton, La Salle Hotel, Chicago.
- TRAFFIC CLUB OF NEW YORK.**—C. A. Swope, 291 Broadway, New York. Regular meetings, last Tuesday in month, except June, July and August, Waldorf-Astoria Hotel, New York.
- TRAFFIC CLUB OF PITTSBURGH.**—D. L. Wells, Gen'l Agt., Erie R. R., 1924 Oliver Bldg., Pittsburgh, Pa. Meetings, bi-monthly, Pittsburgh.
- TRAIN DESPATCHERS' ASSOCIATION OF AMERICA.**—J. F. Mackie, 7122 Stewart Ave., Chicago. Next meeting, June 19, 1917, Fresno, Cal.
- TRAVELING ENGINEERS' ASSOCIATION.**—W. O. Thompson, N. Y. C. R. R., Cleveland, Ohio. Annual convention, October 24-27, 1916, Hotel Sherman, Chicago.
- WESTERN ASSOCIATION OF SHORT LINE RAILROADS.**—Clarence M. Oddie, Mills Bldg., San Francisco. Annual meeting, November 15, 1916, Brown Palace Hotel, Denver, Colo.
- WESTERN CANADA RAILWAY CLUB.**—L. Kon, Immigration Agent, Grand Trunk Pacific, Winnipeg, Man. Regular meetings, 2d Monday, except June, July and August, Winnipeg.
- WESTERN RAILWAY CLUB.**—J. W. Taylor, 1112 Karpen Bldg., Chicago. Regular meetings, 3d Monday in month, except June, July and August, Hotel Sherman, Chicago.

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF JULY, 1916.

Name of road.	Average mileage operated during period.	Operating revenues				Operating expenses				Net from railway operation.	Railway tax accruals.	Operating income (or loss).	Increase (or decr.) comp. with last year.
		Freight.	Passenger.	Total	Miscellaneous.	Traffic.	Trans- portation.	Miscellaneous.	General.	Total.			

MONTH OF AUGUST, 1916

Atlantic City	170	\$86,291	\$336,453	\$422,744	\$19,281	\$30,417	\$9,260	\$2,422	\$6,550	\$111,122	\$33,960	\$25,360	\$6,590
Duluth & Pacific	191	105,822	20,369	126,191	51,524	32,158	61,176	2,332	17,668	164,317	175,875	159,261	50,852
Chicago & North Western	114	138,439	22,137	160,576	1,042,689	1,622,141	2,742,440	813	191,641	6,216,606	4,977,119	4,471,362	964,400
Philadelphia & Reading	1,127	3,761,750	651,301	4,413,051	13,269	29,865	70,302	.....	2,402	118,579	54,350	52,300	11,231
Virginia & Southwestern merged with Southern Pacific Railway July 1, 1916.	.....	.....	.....	4,705,741	24,406	102,992	.....	.....	6,113	170,529	107,308	93,539	22,929
Alabama & Vicksburg	143	\$91,733	\$41,098	\$132,831	\$19,281	\$30,417	\$9,260	\$2,422	\$6,550	\$111,122	\$33,960	\$25,360	\$6,590
Arizona Eastern	378	274,002	44,378	318,380	51,524	32,158	61,176	2,332	17,668	164,317	175,875	159,261	50,852
Atchafalaya, Tonkela & Santa Fe	8,648	7,953,328	2,460,401	10,413,729	1,042,689	1,622,141	2,742,440	813	191,641	6,216,606	4,977,119	4,471,362	964,400
Baltimore, Chesapeake & Atlantic	88	93,510	73,297	166,807	13,269	29,865	70,302	.....	2,402	118,579	54,350	52,300	11,231
Belt Ry. Co. of Chicago	31	.....	.....	277,837	24,406	102,992	.....	.....	6,113	170,529	107,308	93,539	22,929
Bessemer & Lake Erie	205	1,303,222	51,919	1,355,141	89,386	218,736	281,446	.....	14,043	597,064	775,397	753,374	91,664
Buffalo & Susquehanna R. R. Corporation	253	141,111	6,532	147,643	23,150	32,457	59,501	.....	5,555	102,004	48,917	46,317	20,444
Buffalo, Rochester & Pittsburgh	586	1,042,689	124,352	1,167,041	164,915	277,840	371,452	1,373	23,727	853,159	368,300	342,324	102,652
Central of Georgia	1,924	702,766	307,445	1,010,211	115,293	188,406	340,546	649	40,583	773,130	310,162	278,421	131,701
Central New England	301	453,863	37,833	491,696	53,999	41,309	135,338	.....	6,162	236,227	275,622	264,115	103,999
Charleston & Western Carolina	342	92,464	34,658	127,122	25,761	24,330	42,810	.....	3,817	100,596	34,472	29,014	11,400
Chesapeake & Ohio Lines	2,381	3,369,757	655,238	4,025,000	570,979	753,022	1,130,475	30,660	83,681	2,626,898	1,680,534	1,274,200	192,510
Chicago & Alton	1,053	1,106,789	410,475	1,517,264	200,682	308,615	484,633	11,291	31,909	1,071,082	510,395	461,110	131,469
Chicago & North Western	8,108	5,838,765	2,242,833	8,081,598	1,187,084	1,292,193	2,855,150	62,323	164,142	5,641,481	3,567,694	2,332,075	1,152,596
Chicago Junction	13	.....	.....	218,005	24,509	115,237	.....	.....	4,689	162,237	55,768	53,416	10,978
Chicago, Milwaukee & St. Paul	10,208	7,054,405	1,971,174	9,025,579	1,069,510	1,470,011	3,361,942	67,323	169,742	6,216,690	3,804,505	2,997,668	789,267
Chicago, Rock Island & Gulf	477	228,635	79,854	308,489	44,379	30,595	75,021	1,077	9,171	209,457	120,545	113,242	65,084
Chicago, St. Paul, Minn. & Omaha	1,753	1,088,254	541,286	1,629,540	271,249	225,501	603,921	17,345	39,862	1,186,151	577,059	487,746	150,395
Chicago, Terre Haute & Southeastern	373	222,645	18,441	241,086	28,844	104,002	62,778	1,260	7,039	211,811	35,619	29,736	17,511
Cincinnati Northern	246	158,799	24,226	183,025	26,072	28,423	51,687	.....	2,822	113,433	75,865	60,000	33,872
Cleveland, Cincinnati, Chic. & St. Louis	2,384	2,879,205	1,031,276	3,910,481	481,311	768,727	1,296,463	26,805	76,403	2,737,776	1,513,732	1,490,000	1,364,182
Colorado Midland	338	137,475	36,963	174,438	35,713	30,635	72,228	2,470	5,450	153,901	35,277	30,000	26,277
Duluth & Iron Range	277	931,512	22,787	954,299	94,860	75,380	189,775	2,246	11,373	375,075	603,003	52,877	12,404
Duluth, Missabe & Northern	411	1,978,521	32,044	2,010,565	139,349	118,697	305,934	710	11,238	379,321	1,304,131	1,389,490	355,280
El Paso & Southwestern Co.	1,028	928,544	201,332	1,129,876	102,734	119,038	235,205	6,633	24,968	526,659	661,639	622,168	363,691
Florida East Coast	745	423,715	102,037	525,752	80,728	169,926	175,218	3,319	17,145	331,668	255,967	229,970	197,413
Galveston, Harrisburg & San Antonio	1,361	1,057,587	300,686	1,358,273	143,146	184,968	426,207	9,911	36,544	849,778	593,367	544,445	17,970
Georgia, Southern & Florida	395	126,539	59,080	185,619	28,386	79,324	73,661	45	8,147	157,685	47,493	36,318	17,641
Grand Rapids & Indiana	575	310,670	227,175	537,845	68,389	79,391	209,745	3,710	17,264	387,517	197,626	24,081	26,635
Houston, East & West Texas	191	97,513	31,896	129,409	17,283	17,439	42,401	766	3,213	90,968	46,315	5,360	40,946
Houston & Texas Central	895	449,478	137,864	587,342	82,551	85,869	175,218	4,455	18,159	390,885	246,208	30,665	215,492
Illinois Central	4,767	4,623,923	1,305,621	5,929,544	932,405	1,640,965	1,816,359	33,293	155,602	4,666,682	1,827,426	355,000	1,470,613
Indiana Harbor Belt	109	290,560	38,109	328,669	44,490	53,466	125,231	.....	8,063	263,861	156,636	147,954	56,185
Kanawha & Michigan	177	688,583	154,183	842,766	48,898	84,404	25,001	24	7,138	218,206	118,859	14,400	104,459
Kansas City Southern	837	688,583	154,183	842,766	48,898	84,404	25,001	24	7,138	218,206	118,859	14,400	104,459
Lake Erie & Western	900	549,099	78,823	627,922	72,643	111,831	201,198	.....	12,728	412,985	247,613	27,000	75,635
Lehigh & New England	296	223,767	1,401	225,168	39,440	37,052	65,598	.....	5,567	149,523	93,099	84,279	38,758
Lehigh Valley	1,444	3,636,482	496,669	4,133,151	589,998	766,344	1,537,340	17,980	76,797	3,069,507	1,366,138	1,207,101	1,166,24
Long Island	397	376,836	1,008,866	1,385,702	137,028	144,034	525,306	5,967	33,124	837,497	749,442	71,905	58,507
Louisiana Ry. & Navigation Co.	350	152,838	25,774	178,612	26,136	21,664	57,267	.....	6,867	118,713	67,655	11,000	56,655
Louisiana Western	208	135,597	61,002	196,599	38,553	49,664	126,482	1,649	6,949	126,482	82,589	71,275	47,289
Louisville & Nashville	5,671	4,093,731	1,192,414	5,286,145	778,553	1,067,044	1,544,638	18,186	108,055	3,630,444	2,019,394	226,626	1,792,325
Louisville, Henderson & St. Louis	200	98,282	42,578	140,860	26,697	29,126	41,185	.....	2,834	104,497	46,244	3,800	42,388
Maine Central	1,221	669,898	421,624	1,091,522	156,975	147,706	414,926	8,872	28,706	769,932	415,294	49,597	365,666
Midland Valley	385	128,859	44,235	173,094	34,996	29,078	51,266	.....	4,527	124,661	5,934	58,279	155
Missouri & North Arkansas	365	89,533	44,874	134,407	15,701	13,643	36,957	.....	4,760	74,948	66,758	4,800	61,958
Missouri, Kansas & Texas System	3,865	2,220,155	822,440	3,042,595	677,408	593,324	975,372	19,397	96,112	2,413,137	831,400	125,351	700,523
Monongahela Connecting R. R. & S. Co.	108	155,858	10,927	166,785	28,582	10,162	38,345	.....	4,244	82,070	87,900	4,000	83,900
Morgan's La. & Texas R. R. & S. Co.	401	265,026	92,933	357,959	18,529	13,813	30,558	.....	2,816	86,016	3,027	3,027	71,761
Nashville, Chattanooga & St. Louis	1,237	839,325	283,707	1,123,032	226,337	375,134	76,454	7,645	38,985	841,810	370,230	28,500	340,961
New Orleans & North Eastern	204	237,617	54,588	292,205	60,288	9,530	92,363	7,282	12,379	222,363	103,801	15,700	88,101
New Orleans, Mobile & Chicago	402	146,667	30,329	177,000	28,946	26,873	53,235	.....	6,444	119,872	6,491	57,619	24,496
New York, New Haven & Hartford	2,095	3,548,102	2,727,353	6,275,455	824,658	818,533	2,560,232	97,286	169,809	4,525,270	2,624,462	259,000	2,366,073
New York, Philadelphia & Norfolk	112	342,708	58,429	401,137	38,366	104,242	145,459	5,332	11,277	308,316	129,531	13,000	116,434
Norfolk & Western	2,086	4,526,397	583,233	5,109,630	750,958	867,682	64,507	9,041	82,806	2,991,381	2,351,632	205,000	2,146,565
Norfolk Pacific	6,575	5,035,620	1,383,255	6,418,875	1,005,216	692,654	1,854,325	96,139	109,453	3,781,461	3,259,540	485,605	364,993
Pennsylvania Company	1,755	5,531,196	1,135,404	6,666,600	809,141	1,143,336	2,208,424	38,065	144,804	4,428,751	2,908,235	302,281	2,603,844

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF AUGUST, 1916—CONTINUED

Name of road.	Average mileage operated during period.	Operating revenues				Operating expenses				Net from operation.	Railway tax accruals.	Operating income (or loss).	Increase (or decr.) comp. with last year.
		Freight.	Passenger.	Total (inc. misc.)	Maintenance of way and structures.	Equip-ment.	Trans- portation.	Miscel- laneous.	General.	Total.			
Pennsylvania Railroad	4,534	\$14,660,213	\$4,702,401	\$20,664,941	\$2,497,401	\$3,809,045	\$6,673,095	\$274,362	\$489,585	\$13,942,206	\$738,884	\$5,976,311	\$640,670
Pere Marquette	2,249	1,280,921	482,520	1,951,947	180,755	351,264	635,237	5,914	43,528	1,255,795	51,812	\$4,924,583	155,248
Philadelphia, Baltimore & Washington	717	1,149,848	870,912	2,205,431	281,197	418,640	825,247	118	54,226	1,606,633	598,798	534,769	64,067
Pittsburgh, Cincinnati, Chic. & St. L.	1,489	3,152,823	874,099	4,504,554	639,946	834,277	1,403,144	28,780	105,791	3,081,907	175,508	1,246,276	162,135
Richmond, Fredericksburg & Potomac	88	162,177	93,755	283,136	17,556	42,229	91,554	2,363	7,523	165,179	9,100	108,847	41,226
Rutland	468	171,077	130,227	353,180	49,905	54,191	112,451	1,255	6,967	234,691	17,201	101,288	14,290
St. Joseph & Grand Island	258	150,062	120,728	270,790	23,524	23,524	51,464	519	4,600	114,550	7,975	72,000	56,853
St. Louis & San Francisco	4,752	3,168,066	1,211,235	4,663,853	668,406	834,127	1,382,798	.....	102,811	3,032,974	173,656	1,454,654	374,532
St. Louis, Brownsville & Mexico	548	281,311	102,000	430,653	48,848	38,526	116,477	.....	9,596	221,002	8,000	201,641	116,225
St. Louis Merchants' Bridge Terminal	9	.....	397	238,137	35,968	13,509	86,378	.....	6,836	143,458	7,600	87,059	37,524
St. Louis Southwestern	943	580,948	132,559	754,996	54,789	125,728	176,519	3,118	24,156	415,869	339,127	294,867	104,668
San Antonio & Arkansas Pass.	726	265,348	92,148	380,603	57,436	48,712	142,852	.....	13,578	265,831	20,000	90,763	56,917
Seaboard	3,446	1,337,808	460,748	1,969,093	254,844	287,544	662,244	9,599	63,032	1,345,845	623,249	520,560	104,948
Tennessee Central	295	104,461	37,934	150,270	35,520	20,704	52,893	.....	8,811	111,320	102,505	50,763	7,403
Terminal R. R. Ass'n of St. Louis	37	.....	276	228,731	31,946	16,979	70,875	.....	2,011	124,049	27,484	76,263	12,513
Texas & New Orleans	468	291,583	98,395	422,422	54,134	60,245	123,927	10,757	11,012	267,375	19,924	135,017	90,839
Texas & Pacific	1,944	1,070,872	438,072	1,625,802	208,102	208,806	566,319	11,527	51,934	1,086,135	84,500	455,046	180,558
Toledo, Peoria & Western	248	55,916	38,729	104,116	18,564	26,382	37,444	.....	4,201	88,480	6,500	9,136	6,324
Toledo, St. Louis & Western	451	446,024	53,607	526,591	76,424	73,613	154,173	.....	8,610	199,009	19,000	180,009	45,850
Union R. R. of Baltimore	8	136,083	27,078	165,118	12,256	.....	4,623	.....	2,472	19,350	145,767	138,896	32,130
Union R. R. of Pennsylvania	32	.....	568,334	568,334	33,470	90,500	201,322	.....	4,037	329,257	8,201	230,876	3,485
Vandalia	917	777,059	262,500	1,169,994	210,110	219,065	372,126	11,536	27,483	863,272	40,174	265,151	25,431
Vicksburg, Shreveport & Pacific	171	85,256	44,891	142,410	22,466	28,390	42,101	2,024	5,139	104,353	38,057	28,877	17,022
Virginian	510	632,174	48,008	725,142	81,009	121,438	150,635	16,409	15,106	389,497	30,000	305,614	16,698
Wabash	2,519	2,261,983	726,044	3,249,927	351,514	547,335	1,065,919	20,575	67,230	2,126,566	98,844	1,024,114	197,379
Washington Southern	36	24,237	53,845	127,658	13,590	13,590	44,570	1,051	3,423	76,234	3,900	56,517	17,831
West Jersey & Seashore	359	222,100	813,274	1,117,660	141,827	123,650	305,528	3,439	19,274	606,996	38,176	472,434	24,848
Yazoo & Mississippi Valley	1,382	944,911	237,506	1,243,559	201,554	190,060	355,012	1,697	31,958	799,671	57,000	386,752	147,162

Traffic News

The Traffic Club of Chicago will have its last outing of the season at the Wheaton (Ill.) Golf Club on October 11.

The Buffalo, Rochester & Pittsburgh has made arrangements for its trainmen to announce to passengers on all trains the scores of the world's series games by innings.

The Southern Pacific has placed an embargo on freight bound for the ports of Galveston and New Orleans, where considerable congestion prevails at the present time. The embargo was effective on October 1.

The grain elevator which is to be put up at Baltimore, Md., by the Pennsylvania Railroad, taking the place of the one recently destroyed by fire, it is understood will have a capacity of 5,000,000 bushels.

Dr. Mary E. Pennington, chief of the bureau of research, Department of Agriculture, Washington, D. C., was scheduled to address the Traffic Club of Chicago at luncheon on October 6, on the refrigeration of perishable food products in transit.

Colorado experienced the largest tourist business in its history in the season just closing. Advance figures show that between 175,000 and 200,000 tourists visited resorts in Colorado this year. Most of this business came after the middle of July. Yellowstone Park and other scenic districts had good seasons, but fell a little behind last year when the California expositions drew traffic to the West.

The Traffic Club of Kansas City gave a dinner at the Hotel Muehlebach on October 3. Among those scheduled to speak on this occasion were Rev. Samuel H. Woodrow of St. Louis on "Industrial Warfare or Co-operation"; C. H. Dietrich, assistant freight claim agent and chairman of the committee on prevention of loss and damage claims of the Chicago, Milwaukee & St. Paul on "Loss and Damage."

The Chicago, Rock Island & Pacific has filed with the Public Utilities Commission of Illinois new tariffs for the Chicago suburban district to become effective on November 1. The rates have been increased to conform more nearly with fares on other lines engaged in suburban traffic. In a circular addressed to the patrons of the road, L. M. Allen, passenger traffic manager, states that the suburban traffic has yielded a return of less than one per cent on the capital invested.

"New York & New Jersey Express Company" is the name of a corporation which has been formed in New York City, to haul freight by motor trucks between New York and places in New Jersey within a radius of 20 miles. The company will have 104 trucks, and expects to haul 55,000 tons of freight the first month. In Newark, ten miles from New York, and Elizabeth, fifteen miles, manufacturing has increased rapidly during the past two years, and the manufacturers have been inconvenienced by the congestion of freight on the railroads. The new concern plans to build a seven-story warehouse on Front street, Newark.

The Pennsylvania Lines provided a special train from Chicago to Philadelphia for delegates to the annual convention of the American Association of Traveling Passenger Agents, which took place on October 2 and 3. The train left Chicago on September 30, and included among those aboard were two regularly accredited women delegates, Miss Avis Lobdell, passenger agent of the Union Pacific at Portland, Ore., and Miss Olive Lender, passenger agent of the Union Pacific at Spokane, Wash. The Union Pacific has two other women passenger agents on its payroll, one at Seattle, Wash., and the other at Walla, Walla.

The Trunk Line Association has announced reduced passenger fares for residents of Washington returning to their homes for the November election or for registration, which are also applicable to members of their families. The rate announced is 2 cents per mile in each direction, with a minimum of \$1 for the round trip, going and returning via the same route, from Washington to points in Delaware, Maryland, New Jersey, New York, Pennsylvania and West Virginia, tickets to be sold good

going on dates beginning October 5, and good returning to reach Washington not later than November 12. A joint agency for the identification of voters will be established under the jurisdiction of the Washington terminal lines. The League of Republican State Clubs has also asked other passenger associations to make similar arrangements.

For the purpose of aiding farmers and others along its lines to get in touch with the most advantageous markets for the sale of their products, the Nashville, Chattanooga & St. Louis has inaugurated a free marketing service in charge of L. P. Bellah, general agent. Farmers are asked to communicate with the company for the complete description, prices and other necessary information which will be furnished free of charge. Prospective purchasers of agricultural products are invited, also, to advise the department of their needs so that the supply may be directed to the demand. It is believed that the inauguration of this service will work to great advantage, especially as it will enable the farmers and gardeners in the territory served by the company's lines to dispose of those products not now reaching the market through established channels.

The New York State Public Service Commission, Second district, announces that there has been filed a new joint and local freight tariff making changes in class rates between points in New York state located in Central Freight Association territory, also between points in such territory and Niagara Frontier points. It is issued by E. Morris as agent for various carriers operating in such territories. The rates proposed are based on distance, and they make changes in every class rate. A comparatively small number of the rate changes are reductions; a great majority are increases. The plan of stating rates in the new tariff differs in many respects from that heretofore used, and because thereof, and the great number of rate changes made, as well as the large number of points affected, the commission cannot publish either the new rates or the changes. The tariff is E. Morris, agent, tariff P. S. C. No. 28, to take effect December 1.

The state of Texas has filed an answer in the injunction proceedings instituted by the railroads against the Texas commission's recent order cancelling the advanced rates it had previously allowed, asking that the Interstate Commerce Commission may be made a party to the proceedings and that the Interstate Commerce Commission's order in the Shreveport case be suspended pending the disposition of the suit. The Texas attorney general's department has given out a statement regarding the controversy, in which it says that by the charter contracts between the railroads and the state, the state expressly reserved the right to control intrastate rates, that the laws under which more than 32,000,000 acres of land were donated to the railroads by the state expressly reserved the power to the state to regulate intrastate rates, and that since the railroads have received the lands and the benefits thereof they are estopped to question the power of the state as reserved in such grants. The statement says that if the order of the Interstate Commerce Commission should be given the meaning and effect claimed by the railroads their direct obligations to the state would be repudiated. The Texas Industrial Traffic League, an organization of the traffic departments of Texas shippers, has appointed a committee for the purpose of endeavoring to prevent extended litigation between the railroad commission and the railroads over the questions arising from the decision of the Interstate Commerce Commission. After the Texas commission had cancelled the increased state rates which it had allowed in the hope that the railroads would accept them in place of the higher rates authorized by the Interstate Commerce Commission, this committee communicated with the railroads, inviting their co-operation in an effort to reach a compromise without extended litigation. But since the matter has been taken into the courts and has gone before the Interstate Commerce Commission in a petition of the Louisiana railroad commission, the shippers' committee has issued a statement saying it has received no reply to its proposal to the railroads. In this statement H. H. Haines, traffic manager of the Galveston Commercial Association and chairman of the committee, says "the action of the Texas commission in cancelling at one fell swoop the advanced rates accrued to the carriers as a result of the recent extended hearing was a surprise to everybody," that the action must have been due to a misunderstanding between the carriers and the commission, as a result of which shippers will suffer from the confusion as to rates which must

ensue. The committee thinks that there is a common ground on which the Texas railroad commission and the carriers and shippers should come together.

Traffic League and Proposed Changes in Rules of Practice Before Interstate Commerce Commission

In a letter dated September 27, the National Industrial Traffic League calls the attention of its members to proposed changes in rules of practice before the Interstate Commerce Commission, a matter which will be discussed at the annual meeting of the League in November. Believing that no adequate analysis of rate compilations or tabulated statements offered as exhibits can ordinarily be made at the hearing of a case when not filed and served prior to that time, the commission proposes to amend the rules of practice so this evidence must be filed in advance of a hearing. The proposed amendments are as follows:

PROPOSED AMENDMENT TO RULE III.

"To each complaint must be attached a descriptive list of such rate compilations and tabulated statements as are filed therewith in accordance with rule XIII, as amended.

PROPOSED AMENDMENT TO RULE XIII.

"All rate compilations and tabulated statements which the complainant intends to offer in evidence must be filed with the Commission at the time complaint is filed, and any compilations and statements which the defendant desires to submit in answer thereto must be filed with the Commission within 30 days thereafter. Similar data in rebuttal must be filed with the Commission 15 days after the service of the tabulations filed by the defendants.

"In investigation and suspension cases the respondents must file with the Commission all rate compilations and tabulated statements which they intend to offer in evidence within 15 days from the date of service of suspension order upon their agents in Washington. Protestants must file any compilations or statements they desire to submit in answer thereto within 30 days thereafter. Similar data in rebuttal must be filed with the Commission 15 days after the service of the tabulations filed by the protestants. These periods will not be extended except upon application to the Commission and for good cause shown.

"Five copies of all compilations and statements referred to in the two preceding paragraphs must be filed with the Commission, and the Commission will supply three copies thereof to opposing counsel upon request. In special cases the Commission may require additional copies to be furnished.

"Except where such compilations and statements are filed with the complaint, a notice describing such compilations and statements must be served upon all adverse parties."

The letter sent out by the League offers arguments pro and con the proposed changes. Objections are raised to the proposed rules on the ground that a shipper filing a complaint will be compelled to present his principal data to the carriers before the case comes on for hearing, holding that any party to the complaint should have the privilege and right to present at the hearing any data which bears on the subject, whether or not it has been previously submitted to the carriers at the time of filing the complaint. Furthermore, no case from which a material fact has been excluded can be said to have been properly treated or brought to a proper conclusion. It is also stated that one of the rules of the law of pleadings is that the pleadings must contain only the facts that constitute the cause of action and that evidential facts have no place in the pleadings which in this instance would be the petition or complaint filed with the Commission.

On the other hand, it is pointed out that the proposed rules would be of benefit to the shippers in connection with investigation and suspension cases. In these cases the carriers often file voluminous exhibits, making it necessary to ask for postponed hearings so that shippers may have an opportunity to analyze them. Inasmuch as most of the more important cases before the Commission are I. & S. cases the shippers would be better off than under the present mode of procedure. If it develops that additional evidence is required by the shippers in rebuttal, such data could be submitted orally at the hearing or it is likely that consent could be secured from the Commission, permitting such exhibits to be filed at the time of hearing. Under proposed rules points at issue will be more clearly defined and both sides will have a clearer understanding of the questions involved.

Commission and Court News

INTERSTATE COMMERCE COMMISSION

The New York Hay Exchange Association has filed a complaint against certain provisions of embargoes on hay issued by the New York Central.

The commission has further suspended from September 29 until March 29, 1917, tariffs providing for the cancellation of certain commodity rates on fireproofing filed by the Chicago Great Western, and by E. B. Boyd.

The commission has further suspended from October 3 until April 3, 1917, proposed increase in class and commodity rates from points in the Scranton and Williamsport, Pa., groups to western lake ports and to St. Paul.

The commission has further suspended from September 29 until March 29, 1917, the operation of proposed increases in rates on cotton bagging and duck from Chicago, Peoria, Ill., and other points to destinations in Kansas.

The commission has suspended from October 1 until January 29, 1917, tariffs filed by the Chicago & North Western proposing increased commodity rates on fuel wood in carloads from various points in Michigan to points in Wisconsin.

Examiner Gartner held a hearing at Washington on September 27 on the application of the Grand Trunk Railway of Canada to continue the operation of the boats of the Canada-Atlantic Transit Company, under the terms of the Panama Canal Act.

The Interstate Commerce Commission has further suspended from October 3, 1916, until April 3, 1917, the operation of tariffs filed by New England lines providing for the cancellation of certain proportional class and commodity rates from New England points to New York.

The Interstate Commerce Commission has suspended from October 4, 1916, to February 1, 1917, a tariff filed by the Carolina, Clinchfield & Ohio increasing the rate on cement in carloads from Kingsport, Tenn., to New Orleans and other Louisiana points from 13 to 15 cents per 100 lb.

The National Livestock Exchange (Chicago) has filed a complaint with the commission alleging that the privileges of feeding, watering, sorting and double-decking stock at certain stopping places on the Burlington, the St. Paul, the Rock Island, the Northwestern and the Minneapolis & St. Louis are discriminatory against many intermediate stations and against the public markets at the stockyards in the large cities in that territory.

Examiner Watkins of the Interstate Commerce Commission held a hearing at Washington on September 28 and 29 on proposed advances ranging up to 8.6 cents in the rates on cotton factory products from points in the Southeast to Chicago, Ft. Wayne, Akron, Cleveland, Detroit and Toledo. The advance applies only to the 20-cent rate north of the Ohio river, which is added to the rate of 35 cents up to the river, and was made by the Central Freight Association lines to restore a rate formerly reduced.

The commission has suspended from September 30 and November 1 until January 28, 1917, new rules in a tariff filed by the Missouri Pacific and St. Louis, Iron Mountain & Southern governing the routing of shipments of cotton from points in Arkansas, Missouri, Oklahoma and other states to interstate destinations reached by these lines and their connections. The present rules permit shippers to designate the delivering carrier, while under the proposed rules the joint through rates would only apply provided the carrier is permitted to control the routing.

The Interstate Commerce Commission has sent blank forms to the carriers involved in the lake cargo coal rate cases for the purpose of obtaining such information as is readily available tending to show the operating conditions obtaining with respect to shipments of lake cargo coal for representative routes from

principal bituminous coal producing districts in the territory embraced in the investigation to the lower Lake Erie ports. The blanks call for a large amount of detailed information regarding the operating conditions for the period from July 1, 1915, to June 30, 1916, showing various details in the handling of this coal and loading conditions and other factors affecting the cost of the service.

The Unit Marketing System, a farmers' organization of Texas engaged in shipping and marketing vegetable products, and Roy Campbell, of San Antonio, Texas, engaged in the same business, have filed a complaint with the Interstate Commerce Commission against the St. Louis, Brownsville & Mexico and other southwestern roads against the practice of charging a stated refrigeration charge in addition to the freight rate on shipments of vegetables initially iced by the shipper. Complainants have established pre-cooling plants operating on a system which they prefer to that provided by the railways, and ask a decision similar to that of the commission in the Arlington Heights case, so that they may be allowed to pre-cool and pre-ice carloads of vegetables at their own expense, and that they may pay no more than \$7.50 a car in addition to the regular freight rate for the privilege. They state that they are willing to release the railroads from liability for the condition of the shipments provided they are handled in reasonable time.

Coal Rates to Red Wing

Coal to Red Wing, Minn.; also Fourth Section Applications Nos. 2297 and 2874. Opinion by Commissioner Harlan.

The Chicago, Milwaukee & St. Paul is denied authority to maintain a rate on coal from Chicago and Milwaukee to Red Wing, Minn., lower than to intermediate points. The Chicago Great Western is authorized to establish a proportional rate from Chicago on bituminous coal in carloads, when originating at points in Kentucky and West Virginia, to Red Wing, the same as the rate maintained by the St. Paul from Milwaukee to Red Wing; and to maintain higher rates at intermediate points between, but not including, Alta Vista, Iowa, and Red Wing. The orders of suspension are vacated. (41 I. C. C., 309.)

Iron and Steel Tariffs Suspended

The Interstate Commerce Commission has suspended from October 1 and later dates, until January 29, 1917, tariffs providing for the cancellation of export commodity rates on iron and steel articles from Pittsburgh, Pa., Chicago, Ill., and other points in Central Freight Association and eastern Trunk Line territories to Atlantic coast and gulf ports. This would leave the domestic rates in effect and cause advances from Chicago to New York amounting to \$1.62 a ton on pig iron, \$1.74 on billets and blooms, and 10½ cents on iron and steel articles. A number of representatives of iron and steel companies recently appeared at an informal hearing before the suspension board of the commission and protested against the advances. The commission has also suspended until January 29 the proposed increases on certain iron and steel articles westbound for export from Chicago and Pittsburgh and other eastern points to the Pacific coast. The proposed advance from Chicago is from 30 to 40 cents, and from Pittsburgh from 42 to 45 cents.

STATE COMMISSIONS

The Public Service Commission of Indiana opened a hearing at Indianapolis, on October 2, on the proposed readjustment of freight rates of railroads in the state.

The principal railroads of West Virginia have asked the Public Service Commission of the state for authority to revise their freight rates December 1. The tariffs filed with the commission provide for increases in some cases and reductions in others.

PERSONNEL OF COMMISSIONS

William D. Williams, a member of the Texas State Railroad Commission, died at his home in Austin, Texas, October 1, of heart failure at the age of 59. He had served on the commission seven years.

COURT NEWS

The Baltimore & Ohio Southwestern has taken an appeal from the decision of the Circuit Court of Sangamon county, Ill., holding that the order of the state commission that coal cars be distributed according to the immediate needs of the shippers was neither illegal nor unreasonable. The Baltimore & Ohio Southwestern contends that the ruling of the commission is an attempt to control interstate commerce, as many coal cars are sent out of the state. The commission brought suit against the railroad for distributing coal cars according to the largest number of orders in the preceding 12 months.

Freight Rate Regulation

The Minnesota Supreme Court holds that Chapter 367, Laws 1915, providing that freight rates must be based on distance, and that as an exception to this rule the commission may, in making or adjusting tariffs, unite several communities into a common point regardless of distance, does not violate the provisions of section 1, article 3, of the Minnesota Constitution. It is not an attempt to delegate legislative power.—*St. Paul Assn. of Commerce v. Burlington (Minn.)*, 158 N. W., 982.

Contract Requiring Shipper to Unload Stock

In an action for damages to a shipment of live stock by the carrier's failure to unload it on arrival, the Texas Court of Civil Appeals holds that evidence of a former custom to unload stock shipped to that point when unaccompanied by caretakers was incompetent to abrogate the express terms of a shipping contract requiring the shipper to unload it, if the shipper on a sufficient consideration executed such contract.—*Rock Island v. Pavillard (Tex.)*, 187 S. W., 998.

Crossing Accident—Chauffeur's Negligence

The Supreme Court of the State of Washington holds that the driver of an automobile, who drove up a 12 per cent incline to a crossing on intermediate gear at a speed of 10 to 15 miles an hour, under which circumstances the car could have been stopped in from 3 to 5 feet, but failed to stop, though there was an approaching train in view not more than 300 feet away, was negligent, as matter of law, in attempting to cross in front of the train.—*McKinney v. Port Townsend & Puget Sound (Wash.)*, 158 Pac., 107.

Contracts for Settlement of Claims for Injuries

The Oklahoma Supreme Court holds that a contract between a railroad company and an employee engaged in interstate commerce for the settlement of such employee's claim under the federal employers' liability act for injuries received, entered into after the accident is not void as being in conflict with section 5 of that act, providing that: "Any contract, rule, regulation or device whatsoever, the purpose or intent of which shall be to enable any common carrier to exempt itself from any liability created by this act, shall, to that extent, be void."—*Patton v. Atchison, T. & S. F. (Okla.)*, 158 Pac., 576.

Contract for Payment of Transportation by Installments

The Atchison, Topeka & Santa Fe entered into a contract with a concert company to provide transportation for a number of musicians from points in Mexico, New York, and Texas, to Denver, to be paid for at the rate of \$500 a week until paid. The transportation cost \$2,000. In an action against the concert company's guarantor, the Colorado Supreme Court held that there was not discrimination within the meaning of the Interstate Commerce act. Some credit may be extended, and this is only unlawful when amounting to a discrimination, depending on the facts in each case.—*Atchison, T. & S. F. v. Bowman (Colo.)*, 158 Pac., 814.

"Actual Cost" of Repairing Cars by Shippers

Construing the words "actual cost of the same" in the tariff provision, "When cars furnished by carriers named below for grain or other loading require repairing in order to insure against leakage in transit, and material necessary for this repair is furnished by the shipper, the carrier will pay the actual cost

of the same, but not to exceed 80 cents per car," the Kansas Supreme Court holds that the words include the cost of the material and labor necessary to repair; but not the cost of inspecting or cleaning cars, or the cost of attaching grain doors. Reimbursement of shippers for the latter item is prohibited by rule 78 of the Interstate Commerce Commission when not expressly provided for.—*Rock Milling, etc., Co. v. Atchison, T. & S. F. (Kan.)*, 158 Pac., 859.

Special Contracts as to Passenger Fares

Prior to the passing of the New York public service commission's law in 1910, a country club made a contract with a railroad for a round trip fare to the club members from Syracuse to the clubhouse of 15 cents in place of the ordinary round trip fare of 25 cents. While the contract was valid under the common law it was concededly illegal if entered into after the passing of that act. The railroad contended the act prevented it from carrying club members for less than the filed rates. The New York Supreme Court held that, where the legislature has passed a statute which makes a prior contract between a common carrier and a patron illegal, the carrier cannot be compelled to fulfill its covenant under such contract, and, while the contract was valid in its inception, the act rendered it unenforceable in a court of equity.—*Onondaga Golf and Country Club v. Syracuse & Suburban*, 160 N. Y. Supp., 693.

Sale of Road Under Foreclosure Proceedings

Where a railroad was sold under foreclosure proceedings, and it was necessary to take additional time to search title and ascertain liens, to catalogue the property; or, for an opportunity to form a corporation to take over the operation of the road and its franchises, it is held that these were not grounds for an extension of time to complete the purchase; the statute providing that an individual purchaser at the sale of a railroad may operate for six months until a corporation has been formed for such purpose.

Under the New York statute, providing that a sale made in pursuance of any provision of this title must be at public auction to the highest bidder, with notice given by the officer making it, where a railroad was sold in foreclosure proceedings under an order of the court providing that, if any purchaser shall fail to comply with the terms of sale, the property will be again put up for sale under the same terms without application to the court, and such purchaser shall be held liable for any deficiency caused by the resale, where the purchaser failed to pay the balance of the purchase price in accordance with the terms of the sale, a subsequent private sale by the referee without publication was invalid.—*Palmatier v. Catskill Mountain*, 160 N. Y. Supp., 49.

Injury to Passenger in Vestibule—Questions of Negligence and Contributory Negligence for Jury

A passenger, while passing with others from one car to another, shortly after the train started, in search of seats, stopped for a short time in the vestibule connecting the cars, and, being jostled by others, placed his hand on the face plates on the connecting vestibules, where it was caught and injured when the plates opened and closed as the train entered or passed from a curve. The plates were not equipped with roller curtains or shield guards to protect passengers from injuries, although such equipment was in common use, and was used in some of the vestibules in the same train. In an action against the railroad the Circuit Court of Appeals, First Circuit, held that the questions of the company's negligence and the passenger's contributory negligence were both for the jury. Mr. Aldrich, district judge, said: "It cannot be that any of the older cases with reference to passengers standing upon the old-style platforms have any particular pertinency. The vestibule system is such as to reasonably present the question of fact whether the purpose was not to afford easy communication between the different parts of the train. We do not think any absolute rule, one way or the other, is created by the fact whether the train was a through one or one made up altogether of parlor cars, or altogether of vestibule cars. Given circumstances in that respect, one way or the other, might have some bearing upon the question of the reasonableness of care."—*New Haven v. Kilby*, 233 Fed., 252.

Obstruction of Fire Apparatus—No Evidence of Negligence

A novel point has recently been decided by the New York Appellate Division in a case where damages were claimed from a railroad company for a proportion of the value of a building and its contents which had taken fire. It was claimed that a fire engine had been obstructed by one of the defendant's freight trains for from 10 to 15 minutes at a crossing by the negligence of the company's servants. The train was a fast freight, of 53 cars, running on the West Shore tracks through Syracuse. It did not stop at the crossing, though there was evidence that the fire chief called on a brakeman to stop and cut the train in two, which could have been done in two minutes. The court said that the claim of negligence in the management of the train could not be sustained merely because it was now possible, in the light of what had happened, to map out a course which might have been better or wiser than that which was taken. Taking the most favorable view the evidence did not justify the jury's finding of negligence. The train had the right of way, only to be yielded to the fire department in an emergency. No official, no employee of the city, nor any one else by his mere ipse dixit could require the men in charge of the train to stop it or divide it into parts. The delay was partly caused by a freight train ahead, which unexpectedly stopped. Even taking into account the stoppage of this preceding train, which might proceed at any second, a finding of error of judgment on the part of the engineer was not justified.—*Globe M. Iron & Steel Co. v. New York Central*, 160 N. Y. Supp., 24.

Court Decisions Under the Employers' Liability Law

W. E. Kay, in an address before the Southeastern Association of Railway Claim Agents at Atlantic Beach, Fla., June 30 last, reviewing the present state of the laws regulating the liability of railroad companies for damages in cases where employees are injured, as affected by judicial interpretations, cited 34 illustrations of what had been decided in suits where the law was sustained, as follows:

An engineer switching cars from a train which had just been brought in from another state. *K. C. R. Co. v. Pope*, 152 S. W. 185.

A brakeman carrying ice for interstate train. *Illinois Central v. Nelson*, 203 Federal 956.

A brakeman injured by the negligence of a fellow servant working on an intrastate car. *Carr v. N. Y. C.*, 136 N. Y. S. 501.

A brakeman, looking for tin cup for interstate train. *B. & O. v. Whitacre*, 124 Md. 411.

A brakeman on pick-up train containing interstate freight, setting brake on intrastate car. *N. Y. C. v. Carr*, 238 U. S. 160.

Firemen, firing engine to be attached to interstate train. *Lonesellita v. N. Y. C.*, 94 Atl. 804.

Switching coal cars containing interstate shipments, for dumping into bunkers for use of interstate locomotives. *Barlow v. Lehigh Valley*, 143 N. Y. S. 1053.

A yard clerk meeting interstate train. *St. Louis v. Seale*, 229 U. S. 156.

A section foreman of switch yard where interstate train made up. *Willever v. D. & R.*, 94 Atlantic 595.

Inspector helping to clear a yard wreck. *Southern Ry. v. Puckett*, 85 Southeastern Rep. 809.

A roundhouse employee. *Cross v. Chicago*, 177 S. W. 1127.

An electric signalman controlling both intra and interstate trains. *Cincinnati v. Bonham*, 130 Tenn. 435.

Truckman wheeling interstate freight from warehouse into car. *Illinois Central v. Porter*, 207 Fed. 311.

Pumper at station pump for interstate locomotives. *Horton v. Oregon*, 72 Washington 503.

The hauling of empty freight cars from one state to another. *North Carolina v. Zachary*, 232 U. S. 248.

Employee assisting in running train, when any cars go outside of state, though employee is not intending to pass state line. *Mattox v. C. & A.*, 187 Ill. App. 529.

An employee reporting on interstate duty at station on express order. *Lamphere v. O. R. & N.*, 196 Fed. 336.

Going to work on switch engine, used at outset of shift in interstate commerce. *Knowles v. New York*, 150 N. Y. S. 99.

Engineer going home on push car. *L. & N. v. Walker*, 162 Ky. 299.

Section hand returning on hand car to camp. *San Pedro v. Davis*, 210 Fed. 870.

Going from saloon to station, after brief absence. *Graber v. Duluth*, 159 Wis. 414.

Shoveling dirt from between interstate tracks. *Lombardo v. Boston*, 223 Fed. 427.

Repairs on trestle used in interstate commerce. *L. & N. v. Walker's Admr.*, 162 Ky. 209.

Waiting for train to pass over track used for interstate traffic, on which laborer was repairing rails. *Glunt v. Penna.*, 95 Atl. 109.

Unloading coal from cars. *Kamhoris v. Oregon*, 146 Pac. 1097.

Switching coal cars from another state to trestle for unloading. *Barlow v. Lehigh Valley*, 214 N. Y. 116.

A member of train crew, weighing cars after delivery to consignee of interstate freight. *Wheeling Terminal v. Russell*, 209 Fed. 795.

Framing a new office in freight shed, used for both inter and intra-state traffic. *Eng. v. Southern Pac.*, 210 Fed. 92.

Installing block signal system on track over which interstate trains passed. *Saunders v. Southern Ry.*, 167 N. C. 375.

Moving oil from oil car to provide fuel for engines. *Montgomery v. Southern Pacific*, 64 Or. 597.

Boilermaker's helper, injured while assisting in shop in repairing engine regularly used in interstate commerce. *Law v. Illinois Central*, 208 Fed. 869.

Machinist in yard, sent to repair switch engine handling interstate freight. *Staley v. Illinois Central*, 119 N. E. 342.

Repairing switch engine for mixed traffic, temporarily withdrawn. *Southern Pacific v. Pillsbury*, 151 Pac. 277.

Car diverted for necessary repairs. *St. Louis v. Conarty*, 155 S. W. 93.

Mr. Kay also referred at length to the *Spokane & Inland Empire* case (reported in the *Railway Age Gazette* of June 23, 1916, page 1563), where a motorman, who had run past an appointed meeting station, and consequently was injured in a butting collision, recovered damages from the road, in spite of his negligence, because the road, in the opinion of the jury, had not provided adequate brake power, and so was violating the law. This decision was by the Supreme Court of the United States.

The following nine illustrations were quoted on decisions where the accidents, which were the subject of litigation, were held not to be covered by the Federal act:

Extra conductor, riding to serve on work train. *Feaster v. P. & R.*, 197 Fed. 580.

Brakeman running on extra, lone engine, between intrastate points. *Wright v. Chicago*, 143 N. W. 220.

The Supreme Court of the United States, in *Behrens v. Illinois Central*, 233 U. S. 473, reversed the District Court of Louisiana and the Fifth Circuit Court of Appeals, which had held in 192 Fed. 581, that a fireman working on an intrastate train, then engaged in intrastate commerce, although ordinarily also engaged in interstate commerce, was included, and held that in this particular case the Federal act did not apply.

The construction of a building to be used in interstate commerce. *Brans v. Chicago*, 217 Fed. 234.

Building coal chute. *Noris v. Chicago*, 172 Mo. App. 125.

Repairing car for another railroad company. *Heimbach v. Lehigh Valley*, 197 Fed. 579.

Repairing boiler of wrecking train engine lying in roundhouse, excluded; it being an appliance which may or may not be used in interstate commerce. *Ruck v. Chicago*, 153 Wis. 158.

Cleaning stencils. *Illinois Central v. Rogers*, 221 Fed. 52.

The Supreme Court of the United States, in *Robinson v. B. & O.*, 237 U. S. page 84, held that the Federal act gave no right of recovery to a Pullman porter, because he was not an employee of the railroad company; there is nothing in the act to show a congressional intent to include that class of operatives.

Liability for Acts of Railroads' Peace Officers

The authorities are almost unanimous in holding that when an officer of a railroad acting as a peace officer is merely performing his duty as such, and is not at the time furthering the interests of his company, such company will not be liable for his acts. The North Dakota Supreme Court holds that a railroad is not liable, under the act of 1913, making railroads "responsible for the acts of all conductors or other persons employed by it while acting as peace officers," for a malicious assault committed by a special peace officer employed by it, and a brakeman, when such assault is not committed for the purpose of protecting the company's property, or in the furtherance of its business, or while such persons are acting for it. A man was ejected from a train, about a mile from a station, for stealing a ride. While the train was at the station he came up with it and got into an altercation with another brakeman. He was chased away, and after circling the town returned to the station, where he was arrested on the public street by the peace officer, either on the charge of an assault with a deadly weapon alleged to have been committed during the altercation, or for having unlawfully stolen a ride on the train. After the arrest, he was assaulted by the brakeman, who was aided by the police officer, either by standing by without interfering or by holding the plaintiff. There was no proof whatever that at the time of the assault either the peace officer or the brakeman was acting for the protection of the company's property, or that the plaintiff was about to, or intended again to, board the train, or that the peace officer and brakeman had any idea that he intended so to do. The railroad was held not liable. When an appreciable interval intervenes between the acts of protection which are exercised by persons in the guarding of their employers' property and a malicious assault which they afterwards commit, the assault will be deemed to be a personal act of the servant, and not an act of the employer.—*Kinnomen v. Great Northern (N. Dak.)*, 158 N. W., 1,058.

Railway Officers

Executive, Financial, Legal and Accounting

T. D. Alden has been appointed assistant freight auditor of the Atchison, Topeka & Santa Fe, with headquarters at Topeka, Kan.

Oswald J. DeRousse, who has been appointed assistant to the president of the Pennsylvania Railroad at Philadelphia, Pa., was born on February 18, 1867, and entered the service of the



O. J. DeRousse

Pennsylvania Railroad on July 18, 1884, as telegraph operator at Philadelphia. During the following year he was transferred to the service of the New York, Philadelphia & Norfolk, in the office of A. J. Cassatt, president, where he remained until March, 1897, when he was elected secretary of that company. Upon the election of Mr. Cassatt to the presidency of the Pennsylvania Railroad, June 9, 1899, Mr. DeRousse was transferred to the Broad Street station and was appointed chief clerk in the office of the president. In January,

1913, he was appointed general assistant in the office of the president, which position he held at the time of his appointment on September 30, as assistant to the president, as above noted.

Operating

G. A. Newell has been appointed to the new office of assistant superintendent of transportation of the Southern Pacific.

P. J. Regan has been appointed trainmaster on the Montana division of the Northern Pacific, with office at Missoula, Mont.

John A. Cook, trainmaster of the Wabash, with office at Moberly, Mo., has been appointed assistant superintendent of terminals at Detroit, Mich.

John Dody, passenger conductor on the Oregon Short Line, has been appointed division trainmaster, with office at Pocatello, Idaho, succeeding G. L. Hickey, assigned to other duties.

C. A. Reinhart, terminal trainmaster of the Central of Georgia at Savannah, Ga., has been appointed trainmaster, with headquarters at Savannah, vice C. E. Scarborough, promoted.

S. S. Huffman, assistant superintendent of the Chicago & Eastern Illinois at Brazil, Ind., has been appointed assistant superintendent of the Illinois and St. Louis divisions, with office at St. Louis, Mo.

B. M. Hudson, general foreman of bridges and buildings of the Trinity & Brazos Valley at Teague, Tex., has been appointed assistant superintendent, vice E. R. Gassman, resigned, to engage in other business.

H. G. Sparks, division engineer of the Chicago & Eastern Illinois at Salem, Ill., has been appointed assistant superintendent of the Chicago division, with office at Brazil, Ind., succeeding S. S. Huffman, promoted.

J. O. Bell, division superintendent of the Chicago & Eastern Illinois at Salem, Ill., has been appointed superintendent of the Chicago division, with office at Danville, Ill., succeeding G. H. Trenary, deceased.

Henry Shearer, assistant general superintendent of the Mich-

igan Central at Detroit, Mich., has been appointed general superintendent, and W. H. O'Keefe, superintendent of terminals at Detroit, has been appointed assistant general superintendent, with headquarters at Detroit, succeeding Mr. Shearer.

E. A. Peck, general superintendent of the Baltimore & Ohio, Pennsylvania district, with headquarters at Pittsburgh, Pa., having been granted leave of absence at his own request, effective October 1, M. H. Cahill, superintendent of the Cumberland division, at Cumberland, Md., has been appointed general superintendent of the Pennsylvania district, with headquarters at Pittsburgh. G. D. Brooke, superintendent of the Ohio division of the Baltimore & Ohio Southwestern, at Chillicothe, Ohio, has been appointed superintendent of the Cumberland division of the Baltimore & Ohio, and A. A. Iams, superintendent of the Wellston & Delphos divisions of the Cincinnati, Hamilton & Dayton, at Dayton, Ohio, has been appointed superintendent of the Ohio division of the Baltimore & Ohio Southwestern, with headquarters at Chillicothe.

H. M. Hallock, the announcement of whose appointment as general manager of the Chicago & Illinois Midland, was recently made, was born June 19, 1873, at Havensville, Kan. After attending the elementary schools of his native city, he entered Campbell University at Holton, Kan., from which institution he graduated in 1890. In September of the same year he took employment with the Atchison, Topeka & Santa Fe as telegraph operator and station agent, serving in these capacities until 1900. He then went to the Chicago, Rock Island & Pacific, passing successively through the grades of telegraph operator, despatcher, chief despatcher, trainmaster, superintendent and general superintendent. In 1912 he became connected with the Chicago & Illinois Midland as general superintendent, which position he held until his present appointment became effective September 1, 1916. He succeeded F. S. Peabody, who was both second vice-president and general manager, but who now retains the former title only.

Arthur B. Clark, assistant engineer of maintenance of way of the Pennsylvania Railroad, in charge of roadway and track at Philadelphia, Pa., has been appointed superintendent of the



A. B. Clark

Renovo division, with headquarters at Renovo, Pa., succeeding J. M. James, deceased. Mr. Clark was born on October 1, 1867, at Green Village, Pa., and was educated at Mercersburg College, and in 1891 graduated from Lafayette College, with the degree of C. E. During his summer vacations in 1889 and 1890 he served as a rodman on the Pennsylvania Railroad, and after graduation he was rodman on the Philadelphia division, at Philadelphia. In July, 1896, he was promoted to assistant supervisor on the Altoona division,

and later held the same position on the Pittsburgh division, until July, 1900, when he became supervisor on the Baltimore division, Northern Central Railway; one year later he was transferred to the Pittsburgh division, Pittsburgh. He was made assistant engineer of the Middle and Western division, Philadelphia & Erie, on December 15, 1905, and was subsequently transferred in the same capacity to the West Jersey & Seashore, and later to the Maryland division of the Philadelphia, Baltimore & Washington. In January, 1910, he was appointed principal assistant engineer of the same road, with office at Wilmington, Del., and in June, 1913, he became assistant engineer of maintenance of way of the Pennsylvania Railroad, in charge of roadway and track, which position he held at the time of his recent appointment as superintendent of the Renovo division of the same road, as above noted.

A. K. Stone, the announcement of whose promotion from trainmaster to be superintendent of the Montana division of the Great Northern with office at Havre, Mont., was recently made, has been in railway service close to 35 years. He began as a brakeman with the Chicago, Burlington & Quincy and later passed successively through the grades of freight conductor, passenger conductor, assistant trainmaster and trainmaster, on this same road. He resigned this latter position to become superintendent of the Omaha & Council Bluffs Railway & Bridge Company, and a little later on became superintendent of the Kansas City Suburban Belt, now the Pittsburgh & Gulf. For two years he was trainmaster of the Coney Island division of the Brooklyn Rapid Transit and then resigned, taking a position with the Butte Terminal Western Weighing and Classification Bureau, as commissioner. In 1905, he was appointed trainmaster on the Panama Railroad and was soon promoted to master of transportation, which position he held at the time he returned to the States in 1913. He was then made trainmaster of the Great Northern, with office at Grand Forks, N. D., which position he was holding at the time his present appointment became effective, September 10, 1916. Mr. Stone is a brother of Warren S. Stone, grand chief of the Brotherhood of Locomotive Engineers.



A. K. Stone

Traffic

N. W. Pringle, division passenger agent of the Lehigh Valley to Buffalo, N. Y., has been appointed division passenger agent with headquarters at Ithaca.

C. B. McCall, general freight and passenger agent of the Charlotte Harbor & Northern, has been appointed traffic manager, with headquarters at Boca Grande, Fla.

John A. Middleton has been appointed general agent of the St. Louis-San Francisco with office at Kansas City, Mo. This is a newly created position, this road not having had representation here in this capacity previously.

N. R. DesBrisay, chief clerk in the passenger department of the Canadian Pacific at New York, has been appointed district passenger agent, with office at St. John, N. B., succeeding M. G. Murphy, who has been appointed general agent, passenger department, with headquarters at Detroit, Mich.

O. P. McCarty, passenger traffic manager of the Baltimore & Ohio, at Baltimore, Md. has had his authority extended over all owned, leased or controlled lines. W. B. Calloway, general passenger agent of the Baltimore & Ohio Southwestern, and the Cincinnati, Hamilton & Dayton at Cincinnati, Ohio, has been appointed general passenger agent of the Eastern Lines, with headquarters at Baltimore, Md.; George W. Squiggins, general passenger agent of the Baltimore & Ohio, at Baltimore, has been appointed general passenger agent of the Southwest district, with headquarters at Cincinnati, Ohio; and B. N. Austin, general passenger agent of the lines west of the Ohio river, at Chicago, has been appointed general passenger agent of the Northwest district, with headquarters at Chicago.

Engineering and Rolling Stock

O. W. Connett has been appointed valuation engineer of the Western Maryland, with headquarters at Baltimore, Md.

W. R. Elmore, acting master mechanic of the Nevada Northern, has been appointed master mechanic, with headquarters at East Ely, Nevada.

H. H. Orr, chief signal inspector of the Chicago & Eastern

Illinois, has been appointed signal engineer with office at Chicago, Ill.

A. W. White, office engineer of the Chicago & Eastern Illinois, at Chicago, Ill., has been appointed division engineer with office at Salem, Ill., vice H. G. Sparks, transferred to the operating department.

J. S. McBride, valuation engineer of the Chicago & Eastern Illinois, has been appointed principal assistant engineer, with office at Chicago, Ill. He will still perform the duties connected with his former office as valuation engineer, in addition to those of his new position.

Frank H. Reagan, superintendent of shops of the Delaware, Lackawanna & Western at Scranton, Pa., has been appointed master mechanic of the Scranton, the Syracuse & Utica and the Bangor & Portland divisions, succeeding George Durham, resigned to go to another company. B. H. Davis, road foreman of engines at Scranton, has been appointed assistant master mechanic of the same divisions with headquarters at Scranton.

C. H. Niemeyer, division engineer of the Pittsburgh division of the Pennsylvania Railroad, has been appointed assistant engineer of maintenance of way, in charge of roadway and track, with headquarters at Philadelphia, Pa. J. B. Hutchinson, Jr., division engineer of the Monongahela division, has been appointed division engineer of the Pittsburgh division. C. E. Brinser, division engineer at Williamsport, succeeds Mr. Hutchinson. A. W. McClellan, division engineer of the Trenton division, succeeds Mr. Brinser, and Elmer Irving, supervisor at Lancaster, has been appointed division engineer of the Trenton division, succeeding Mr. McClellan.

H. E. Stevens, engineer of bridges on the Northern Pacific, with office in St. Paul, Minn., has been appointed chief engineer with the same headquarters, effective October 1. He was born March 8, 1874, at Bluehill, Me. After attending the common and high schools of his native community, he entered the University of Maine, from which institution he graduated in 1897, after completing the engineering course. Immediately upon leaving the University he took up private engineering practice. About three years later he became associated with Ralph Modjeski, of Chicago, Ill., with whom he remained until the early part of 1904. In May of that year he entered active railway service with the Northern Pacific, being assigned to the bridge department. For three years he was engaged in bridge construction along various parts of the system. In 1907, he was appointed engineer of bridges, which position he was holding at the time his recent appointment became effective.



H. E. Stevens

F. W. L. Schneider, supervisor of the Pennsylvania Railroad at Tyrone, Pa., has been appointed supervisor with office at Lancaster. S. L. Church, supervisor at Dravosburg has been appointed supervisor with office at Tyrone. H. A. Gass, supervisor at Wilkes-Barre, becomes supervisor at Dravosburg. F. D. Davis, supervisor at Barnesboro, becomes supervisor at Wilkes-Barre. J. D. Archibald, assistant supervisor at Lamokin, has been appointed supervisor with office at Barnesboro. R. L. Kell, assistant supervisor at Altoona, becomes assistant supervisor at Lamokin. H. H. Kauffman, assistant supervisor at York, becomes assistant supervisor at Altoona. R. P. Graham, assistant supervisor at Freeport, becomes assistant supervisor at York, Pa. E. B. Gallow, assistant supervisor at Phillipsburg, N. J., becomes assistant supervisor at Freeport, Pa., and J. G. Poffenberger, transitman in the office of the engineer of maintenance of way, has been appointed assistant supervisor at Phillipsburg.

W. L. Darling, chief engineer of the Northern Pacific, with office at St. Paul, Minn., whose resignation to take effect October 1, has just been accepted, was born March 26, 1856, at Oxford, Mass., where he received his early education. Upon graduating from the Worcester Polytechnic Institute, he entered the engineering department of the Northern Pacific. From June, 1879, to August, 1883, he was first resident and then locating engineer on the Northern Pacific, and from August, 1883, to February, 1884, resident engineer on the St. Paul & Northern Pacific. From April to July, 1884, he was locating engineer on the Chicago, Burlington & Quincy, and from December, 1884, to July, 1885, locating engineer on the Florida Railway. In August, 1885, he was appointed engineer in charge of terminals on the Chicago, Burlington & Northern, which position he held until May, 1887. From May to December of this same year, he was chief engineer of the Duluth, Watertown & Pacific. From December, 1887, to January, 1889, he was assistant engineer of the St. Paul, Minneapolis & Manitoba, and from January, 1889, to March, 1891, assistant engineer on the Northern Pacific. From March, 1891, to July, 1898, he was principal assistant engineer on the same road, being appointed assistant chief engineer in July, 1898. From June, 1901, to August, 1902, he was chief engineer. In August, 1902, he was appointed chief engineer of the Chicago, Burlington & Quincy with office at Chicago, Ill., and held this office until October, 1905, being then appointed chief engineer of the Pacific Railway, with office at Seattle, Wash., resigning in January, 1906, to become chief engineer of the Northern Pacific. During the years 1906 to 1909 inclusive, he was, in addition to his duties as chief engineer of this latter road, also consulting engineer in active charge of construction of the Spokane, Portland & Seattle, from Spokane, Wash., to Portland, Ore. In May of this present year he sent in his resignation to take effect October 1, 1916. He retires to engage in private engineering practice.



W. L. Darling

OBITUARY

W. E. Parrott, commercial agent of the Pennsylvania Lines West, with office at Kansas City, Mo., died at his home in that city, on September 29.

William A. Childs, manager of the Calumet & Hecla, which is operated by the Calumet & Hecla Mining Company, died at his home in Calumet, Mich., on September 27, aged 81 years.

George H. Trenary, the announcement of whose retirement from the superintendency of the Chicago division of the Chicago & Eastern Illinois, with office at Danville, Ill., had scarcely been made when his death followed, was born February 9, 1867. He graduated from the High School at Urbana, Ill., in 1883 and entered railway service almost immediately as a messenger and call boy, learning telegraphy with the Indiana, Bloomington & Western. From that time until 1892 he was agent on this same road and its successors at various points along the line, and from 1892 to 1895 he was joint agent of the Chicago & Eastern Illinois, the Cleveland, Cincinnati, Chicago & St. Louis and the Toledo, St. Louis & Kansas City at Veederburg, Ind. From 1895 to 1896 he was agent of the Chicago & Eastern Illinois, and from 1896 to 1899 he was chief clerk to the general superintendent on this same road. From July, 1899, to November, 1904, he was division superintendent at Brazil, Ind., and from November, 1904, to July, 1911, he was division superintendent of this same line, with office at St. Elmo, Ill. On July 1, 1911, he was made superintendent of the Chicago division with office at Danville, Ill., which position he was holding when he applied for a leave of absence on account of continued ill health. He died October 2, 1916, after only a few days' leave of absence from his office.

Equipment and Supplies

LOCOMOTIVES

THE WHEELING & LAKE ERIE is inquiring for 15 Mallet type locomotives.

THE WESTERN MARYLAND is asking for prices on 20 Mallet type locomotives.

THE ATLANTA, BIRMINGHAM & ATLANTIC is inquiring for 3 2-10-2 type locomotives.

THE CHESAPEAKE & OHIO is understood to be contemplating the purchase of 25 Mallet type locomotives.

THE WORTH BROTHERS COMPANY, Coatesville, Pa., has ordered two 0-4-0 type locomotives from the Baldwin Locomotive Works.

THE CHERRY RIVER BOOM & LUMBER COMPANY, Richwood, W. Va., has ordered one 2-6-0 type locomotive from the Baldwin Locomotive Works.

THE CARNEGIE STEEL COMPANY is understood to be contemplating the purchase of 10 to 15 locomotives for use in the Youngstown district.

THE PAULISTA RAILWAY OF BRAZIL has ordered 4 Pacific type locomotives from the American Locomotive Company. They will have 23 by 26-in. cylinders, 66-in. driving wheels, and a total weight in working order of 220,000 lb. They will also be equipped with superheaters.

THE NEW YORK CENTRAL was reported in the *Railway Age Gazette* of September 22 as having ordered 115 locomotives from the Lima Locomotive Corporation. The order consists of 55 Mohawk type and 60 eight-wheel switchers. The Mohawk type will have 28 by 28-in. cylinders, 69-in. driving wheels, and a total weight in working order of 343,000 lb. The eight-wheel switchers will have 23½ by 30-in. cylinders, 57-in. driving wheels, and a total weight in working order of 213,000 lb. All these locomotives will be equipped with superheaters.

FREIGHT CARS

THE UNITED STATES GYPSUM COMPANY has purchased 25 mine cars.

THE UNION TANK LINE is reported inquiring for 500 to 1,000 tank cars.

THE CHICAGO & NORTH WESTERN is inquiring for 500 50-ton steel ore cars.

THE CHESAPEAKE & OHIO is reported to be inquiring for 1,000 50-ton hopper cars.

GULF STATES STEEL COMPANY is in the market for 8 hopper cars and 10 flat cars.

THE MAHONING & SHENANGO has ordered 10 cars from the St. Louis Car Company.

THE PERE MARQUETTE has ordered 100 steel underframes from the Pressed Steel Car Company.

THE BEN FRANKLIN COAL COMPANY has ordered four hopper cars from the Pressed Steel Car Company.

THE ILLINOIS CENTRAL is inquiring for 400 combination ballast and general service cars, also for 600 all-steel composite cars.

THE CAROLINA, CLINCHFIELD & OHIO has purchased 400 all-steel, 50-ton hopper cars, and 100 all-steel, 50-ton gondola cars from the Pressed Steel Car Company.

THE WESTERN MARYLAND, reported in the *Railway Age Gazette* of September 22 as being in the market for 2,000 hopper cars, is reported to have ordered this equipment from the Pullman Company. This item has not been confirmed.

THE NEW YORK CENTRAL is reported to have ordered 2,000 gondolas and 1,000 box cars from the American Car & Foundry Company, and 2,000 gondola cars from the Standard Steel Car Company, in addition to the 5,000 cars previously ordered. This item has not been confirmed.

PASSENGER CARS

THE NORFOLK & WESTERN is in the market for one private car, and is also inquiring for 50 all-steel passenger cars.

THE CHICAGO SURFACE LINES are in the market for 30 to 100 street cars.

THE CHICAGO, LAKE SHORE & SOUTH BEND is in the market for 10 trailers and for two combination express and baggage cars.

IRON AND STEEL

THE ANN ARBOR is reported to be in the market for 2,500 tons of steel rails.

THE CHICAGO & ALTON is reported to be in the market for 3,000 tons of steel rails.

THE CENTRAL OF NEW JERSEY is reported to be in the market for 1,000 tons of steel for bridge renewal work.

THE PENNSYLVANIA LINES WEST are reported to be in the market for 5,000 tons of steel rails.

THE OGDEN, LOGAN & IDAHO has ordered 146 tons of pony through trusses for bridges at Ogden, Utah, from the Ogden Salt Lake Company.

SIGNALING

THE NORTHERN PACIFIC will install a 4-lever addition to the existing 16-lever, model 2, unit lever type electric interlocking machine at Grassy Point, Minn., and will install a 40-lever Saxby & Farmer mechanical interlocking plant with 34 working levers at West Duluth, Minn. The material for these plants is being furnished by the General Railway Signal Company, and the installations will be made by company forces.

THE CHICAGO & NORTH WESTERN has under construction 102.5 miles of single-track signaling between Clyman Junction, Wis., and Wyeville, and 75 miles of single-track signaling between Shoreline (Milwaukee) Wis., and Rosemere (Manitowoc). The absolute permissive block system is being used with G. R. S. model 2A, upper-quadrant signals. In connection with these installations passing tracks will be extended to provide 100-car capacity in each case.

THE BALTIMORE & OHIO AND THE WABASH contemplate the installation some time next year of an electro-mechanical interlocking plant for the protection of the crossing of these lines in Defiance, Ohio. The machine will have 56 mechanical and 40 electrical levers. In connection with the extension of double-track on the B. & O. from East Defiance to Defiance, automatic signal protection will be extended over this section of line, which is now operated as single-track under the protection of controlled manual block. The B. & O. will probably further extend its automatic signals to Sherwood, a distance of 10.1 miles.

CONSTRUCTION PROGRESS ON KONGO RAILWAYS.—In the annual report on Kongo for 1914 a review of the progress in railway construction was given. The Cape-to-Cairo Railway is now operating through trains from Cape Town to Kambove, north Elizabethville. The next stretch is from Kambove to Bukama, a distance of 204 miles by the newly adopted route. At the end of March, 1915, 86 miles of this had been entirely completed, and the roadbed finished some 10 miles more, but work is progressing slowly on account of the difficulty in receiving materials. From Bukama there is an all-rail-and-water route to Boma, and when the Kambove-Bukama section is completed it will be possible to travel in comparative comfort from Cape Town through Central Africa to Boma and Banana on the Atlantic coast.

CHANGE BRITISH TIME OCTOBER 1.—Legal time will be put back one hour beginning 3 a. m., October 1. This means that British time from October 1 will be the same as it was before the daylight-saving system was inaugurated on the morning of May 21, when all clocks in the country were pushed forward one hour at two o'clock, in accordance with the requirements of the daylight-saving act.

Supply Trade News

The Western Electric Company has moved its offices and show rooms in Buffalo from 98 Terrace to 709-711 Main street. J. W. Tabb is the manager of these offices.

G. L. Simonds & Co., Chicago, have changed their name to the Vulcan Fuel Economy Company. The personnel and policies of the organization remain the same.

Major William G. Ramsay, a vice-president and director of the E. I. du Pont de Nemours Powder Company, Wilmington, Del., and chief engineer of its construction department, died on September 28 of pneumonia.

R. W. Hunt & Co., Chicago, have been awarded the contract for the inspection of all the rails and fastenings, aggregating over 400,000 tons, which have been ordered recently from the steel mills of this country by the Russian government railways.

Robert C. Clifford, who has for the past four years been district sales manager for the United States Cast Iron Pipe & Foundry Company, in charge of its St. Louis & Kansas City offices, is now associated with the Walter A. Zelnicker Supply Company, St. Louis, in charge of their rail department.

The Roberts & Schaefer Company, Chicago, has made a contract with the Union Railway Company, Memphis, Tenn., for the designing and building of an automatic electric, reinforced concrete, standard counterbalanced bucket locomotive coaling plant and sand handling facilities to be installed at Sergeant Yard, Memphis, Tenn.

The McKeen Motor Car Company, Omaha, Neb., builders of electric railway motor cars, has just shipped a 55-ft. 200 hp., combination passenger and baggage motor car to the Lakeside & Marblehead Railway, Danbury, Ohio. This self propelled car will operate between Danbury and Marblehead, in place of the four wheel gasoline motor car now in service.

The St. Louis, Iron Mountain & Southern has awarded a contract to the Roberts & Schaefer Company for the building of a 250-ton capacity automatic electric, reinforced concrete coaling plant for installation at Dupo Yard, south of St. Louis, Mo. The Roberts & Schaefer Company will build a similar plant for the Nevada Northern at East Ely, Nevada.

The Burnside Steel Company, Chicago, Ill., has been incorporated with a capital stock of \$100,000. It has purchased a tract of land at Ninety-second and Kimbark Avenue, and is erecting an 80 ft. by 200 ft. foundry building, a 30 ft. by 50 ft. office and pattern storage building, together with material bins, etc. It will produce steel castings and is installing a side blow converter. It will be ready for operation on December 1, this year. The office of the company is at 548 Railway Exchange Building, Chicago. H. F. Wardwell is president, and C. S. Daniels, secretary.

George A. Kyle has been engaged as engineer in charge of location and construction of the railways to be built in China by the American International Corporation, New York City, and the Siemens-Carey Railway and Canal Company, St. Paul, Minn. He will work with officials of the Chinese Government in deciding upon the lines to be built. Mr. Kyle has worked in both hemispheres, both north and south of the equator. He was associated with John Hays Hammond in the Rand, in South Africa, and in Alaska he has built over 600 miles of road, including the line from Seward to the Matanuska coal fields and a line to Fairbanks. More recently he has been engineer in charge of location and construction for the Northern Pacific Railroad.

The Edgewater Steel Company, Pittsburgh, Pa., recently incorporated, has purchased the plant of the Kennedy-Stroh Corporation at Oakmont, Pa. In addition to carrying on the lines of manufacture in steel and brass, formerly handled at this plant, new construction is now under way to give this company a well equipped plant for the manufacture of locomotive and car wheel tires, rolled steel wheels, gear rims, roll shells

and turbine rings. The directors of the company include: Chas. T. Schoen, E. W. Mudge, Maurice Falk, Wm. L. Jacoby, E. T. Weir, Leon Falk, W. H. Schoen, M. R. Jackson, C. M. Thorp, J. H. Baily, F. B. Bell. The officers are: President, F. B. Bell; vice-president, M. R. Jackson; treasurer, W. H. Schoen; secretary, J. H. Baily; general manager, F. C. Riddle.

Colonel Robert Cochran McKinney, chairman of the board of directors of the Niles-Bement-Pond Company, Plainfield, N. J., died at his summer residence in Belle Haven, Conn., after an



Col. R. C. McKinney

illness of more than two years. He was born at Troy, New York, but in 1861 he moved to Cincinnati where he attended the public schools and Woodward High School until eighteen years of age. He next took a partial course in mechanical engineering in Cornell University. His student life was followed by employment in the draughting room and office of a company which manufactured steam pumping machinery at Hamilton, Ohio. In 1877 Mr. McKinney became associated with the Niles Tool Works and within

two years was elected secretary of the company. A short time later he became treasurer and general manager. While with this company he had gained the title of Colonel through his service on the staff of Governor Bushnell, of Ohio. During the reorganization of the Niles Tool Works, necessitated on account of the rapidly expanding business, Colonel McKinney was pre-eminent. In 1898 the Pond Machine Tool Company, Plainfield, New Jersey, was purchased, and options were obtained on the works of the Bement Niles & Company, Philadelphia, Pa., as well as the Philadelphia Engineering Works. Thus the present Niles-Bement Pond Company, was created and Colonel McKinney was elected president of the company, in recognition of his achievement in creating and perfecting its organization. At the time of his death, as noted above, he was chairman of the board of directors.

TRADE PUBLICATIONS

ZELNICKER'S BULLETIN.—The Walter A. Zelnicker Supply Company, St. Louis, has issued bulletin No. 207. This is a 40-page catalogue of rails, cars, locomotives, pipe, steel piling, machinery, tanks, etc.

MULTIBLADE FANS.—The Clarage Fan Company, Kalamazoo, Mich., has recently issued catalogue No. 5, setting forth its line of multiblade fans for heating, ventilating and exhaust purposes. This is a 24-page booklet contained in a mailing folder; it is well illustrated and contains a number of capacity tables for the various size units. A more complete catalogue, No. 51, will be sent on request.

GOODRICH RUBBER GOODS FOR RAILROAD SERVICE.—This is the title of an attractive catalogue recently issued by the B. F. Goodrich Company, Akron, Ohio. The booklet, which contains 48 pages, is said to be the first complete catalogue of its kind, and the fact that the B. F. Goodrich Company specializes on rubber goods for railroads makes this catalogue of particular value. Pages 5-23 inclusive are devoted to the various kinds of hose, viz.: Switch engine fire hose, car heating steam hose and pneumatic tool hose. Descriptions of belting and matting fill several pages. The catalogue also describes belt fastenings, rubber cement, vacuum brakes diaphragms, rubber footwear, gaskets, rubber gloves, tiling, packing, respirators, tires, tubing, valves, wires and cables. The booklet is not only well illustrated, but many of the pages contain valuable points regarding the use of rubber goods—for example: "How to Store Rubber Goods," "A Few Points of Caution on Hose" and similar suggestions.

Railway Construction

ALCOLU RAILROAD.—Construction work has been started near Hams, S. C., it is said, on an extension north towards Florence, about 10 miles. The company now operates a line from Alcolu east to Peroda Junction, thence north via Olanta to Hams. From Peroda Junction a branch line extends east to McElveen, in all about 43 miles.

ARIZONA EXTENSION RAILWAY.—Organized in Arizona to build a railroad from Jerome, Ariz., south to Mesa, on the Arizona Eastern, about 130 miles. J. S. Douglas, of the Phelps, Dodge & Co. interests, is said to be at the head of the new project. He is also largely interested in the United Verde Extension mines at Clarksdale, near Jerome, and it is reported that plans are being made to build a new smelter at these properties. It is understood that the El Paso & Southwestern is to be extended from Tucson northwest to a connection with the new line at Mesa.

ATCHISON, TOPEKA & SANTA FE.—The report of this company for the year ended June 30, 1916, shows that the Crosbyton-Southplains, extending from Lubbock, Texas, to Crosbyton, was acquired during the year, and an extension southwest from Lubbock of about 65 miles is now under construction; an extension of the Minkler Southern is also under construction from Lindsay, Cal., to Porterville, 12 miles. It is expected that both these projects will be completed during the current fiscal year. The North Texas & Santa Fe was organized to build from Hansford, Texas, to a point on the Santa Fe main line, at or near Shattuck, Ellis county, Oklahoma, 85 miles. Work was completed during the year on the extension of the Oil Fields & Santa Fe, and the line is now in operation from Jennings, Okla., south to Pemeta, thence southwest to Cushing, 30 miles.

ETTRICK & NORTHERN.—Contracts have been awarded to E. J. Matchett and John Raichie, Ettrick, Wis., for the construction of a railroad from Blair, Wis., to Ettrick, about eight miles. The work involves about 12,000 cu. yd. of excavation per mile, a maximum grade of 2.4 per cent and a maximum curvature of about 4 deg. There will be from 8 to 10 pile bridges, involving the use of about 350,000 ft. of lumber. John C. Gavney, president, Arcadia, Wis., Tony Knuth, chief engineer.

IRWIN-HERMINIE TRACTION.—This company has under consideration plans for building an extension, it is said, from Irwin, Pa., about 10 miles north to Export. The company now operates a line from Irwin south to Herminie.

KENTUCKY ROADS.—The Interstate Coal & Lumber Company, Elkins, W. Va., is planning to build a 12-mile narrow gage line, it is said, along Middlefork and Grassy creeks, in Leslie county, Kentucky.

LOS ANGELES & SALT LAKE.—This company will build a new line from Pico, Cal., through Whittier, Fullerton, Anaheim to Santa Ana, about 25 miles. The contract for the grading work will soon be awarded. Four combination freight and passenger stations will be built. Both steam and gasoline-electric motive power will be used on the new line. A. Maguire, chief engineer, Los Angeles, Cal.

OREGON-WASHINGTON RAILROAD & NAVIGATION COMPANY.—This company has awarded contracts to Twohy Bros., Portland, Ore., for the construction of an extension from the mouth of Beaver Creek to the head of Carbon Creek, a distance of 10 miles. Camps have been erected and active work was commenced, October 1. About 125,000 cu. yd. of grading will be necessary together with the usual clearing, grubbing and the construction of a number of small bridges and culverts. The approximate cost of this undertaking will be close to \$200,000.

PENNSYLVANIA LINES WEST.—A contract has been given to Ferguson & Edmundson, Pittsburgh, Pa., to build part of a new 12-mile line from Chester, W. Va., along the south bank of the Ohio river east to the mouth of Raccoon creek, which is about three miles below Beaver, Pa. Construction will be started at once; it is the intention to have the extension in operation some time in the coming year.

WESTERN PINE LUMBER & MILL COMPANY (LUMBER ROAD).—This company will let a contract about the first of the year for the construction of a standard gage railroad from Holbrook, Ariz., to a point 74 miles due south. The primary object of this new line will be to transport this company's timber, but later on it will be divorced entirely from this kind of operation and become a common carrier. F. H. Bowen, Red Kay, Ind., is president.

RAILWAY STRUCTURES

BRYN ATHYN, PA.—The Philadelphia & Reading has given contracts to the J. E. Brenneman Company, for the substructure, to the McClintic-Marshall Company for the superstructure and to the Benjamin Foster Company for the waterproofing for a bridge to be built over Pennypack creek, east of Bryn Athyn. This bridge is being built for the Philadelphia, Newtown & New York Railroad to replace a through wooden truss which was destroyed by fire. It is to be a two span, single track, through plate girder bridge, each span to be 54 ft. 3 in. clear.

CHICAGO, ILL.—The Chicago, West Pullman & Southern is erecting a combination engine house and machine shop at One Hundred and Fourth street and Manistee avenue. The building will have concrete foundations, brick walls; will be one story high, 125 ft. long and 175 ft. wide. The machine shop will be steam heated. About \$40,000 has been appropriated for this undertaking.

GREENVILLE, S. C.—The Southern Railway is planning to carry out improvements to include the elimination of a number of grade crossings in Greenville and vicinity incident to the double tracking of its Washington-Atlanta line through that point. Some of these may be eliminated by the construction of overhead bridges and others by underpasses, the full details not having been worked out as yet.

HALSTED, KAN.—A combination passenger and freight station will shortly be erected here by the Atchison, Topeka & Santa Fe. The building will have a concrete foundation, brick superstructure and a tile roof; it will be one story high, 139 ft. long and 38 ft. wide. The cost of this undertaking is estimated at \$12,000.

NEW YORK.—The Thomas J. Buckley Construction Company, New York City, submitted the lowest bid at \$372,892 to the New York Public Service Commission, First district, for the construction of a railroad yard for the storage of subway cars in connection with the White Plains Road extension of the first subway. The yard is to be known as the Two Hundred and Thirty-ninth street yard, and is to have a capacity of 580 subway cars on 37 tracks; an adjoining yard is to be built on the same plot by the Interborough, to have a capacity of about 350 elevated cars. The plot upon which the two yards are to be built is irregular in shape, approximately 800 ft. by 1,100 ft. Elevated trains will obtain access to the yard by means of the Webster avenue-Gun Hill road extension of the Third avenue line, which connects with the White Plains road line. In order to prevent grade crossings at the entrance to the yard, the contract provides for the rebuilding of a portion of the White Plains road structure south of the Two Hundred and Forty-first street terminal station.

OMAHA, NEB.—The Missouri Pacific will separate grades on the Belt Line Railway at Dodge, Douglas and Farnam streets, near Forty-sixth street. The work involves the construction of three viaducts masked with concrete, and about 300,000 cu. yd. of fill. The work will be done by company forces and will cost about \$200,000. John A. Bruce, city engineer.

PORTLAND, ORE.—The Oregon-Washington Railroad & Navigation Company has awarded a contract to Muir & McClelland, Portland, for the construction of new additions to the Albina shops. The contract includes the construction of a one-story brick addition to a pattern storehouse, a three-story concrete extension, 40 ft. by 40 ft., to a paint vault, a metal storehouse, an anthracite coal bin, an extension to a storehouse for baled waste, a platform extension and open shed, a skylight over present store shed, extension of lumber shed and marquise on east side of storehouse. The work will cost about \$25,000. S. Murray, chief engineer.

Railway Financial News

BOSTON & MAINE.—J. H. Williams, Henry P. Binney, Francis R. Hart and William H. Brooks have been elected directors of the Connecticut River Railroad, succeeding Charles E. Gross, Richard Olney, Henry W. Keyes and E. P. Kendrick. The new board of directors, it is said, will probably look more favorably on the provisions of the present reorganization plan by which the Connecticut River Railroad is to be merged with the Boston & Maine.

CHICAGO & EASTERN ILLINOIS.—In accordance with an order of the United States district court, the receiver of the Chicago & Eastern Illinois is paying all coupons due on the following underlying bonds: Danville & Grape Creek first mortgage 6 per cent; Evansville, Terre Haute & Chicago income 6 per cent; Chicago & Eastern Illinois first extension 6 per cent; Chicago & Eastern Illinois first consolidated 6 per cent; Evansville & Terre Haute first consolidated 6 per cent; Evansville Belt first 5 per cent.

CHICAGO, ROCK ISLAND & PACIFIC.—A protective committee for the St. Paul & Kansas City Short Line first mortgage $4\frac{1}{2}$ per cent bonds has been formed, consisting of Eugene Meyer, Jr., Horace E. Andrews and W. D. Wood. A protective committee has also been formed for the Rock Island, Arkansas & Louisiana first mortgage $4\frac{1}{2}$ per cent bonds, consisting of Henry Ruhlender, Andrew J. Miller and Timothy S. Williams.

CONNECTICUT RIVER RAILROAD.—See Boston & Maine.

MARIETTA, COLUMBUS & CLEVELAND.—A press despatch from Marietta, Ohio, says that this road, which was recently sold under foreclosure, is to be abandoned and the equipment is to be sold. The Marietta, Columbus & Cleveland runs from Marietta, Ohio, to Palos, 45 miles.

MEMPHIS, DALLAS & GULF.—Application has been made for a receiver for the Memphis, Dallas & Gulf by the trustee of the outstanding \$420,000 bonds. The Memphis, Dallas & Gulf runs from Hot Springs, Ark., to Texarkana, 135 miles.

MISSOURI, KANSAS & TEXAS.—The interest coupons, due April 1, 1916, on the \$4,000,000 outstanding Missouri, Kansas & Eastern first mortgage bonds are being paid on presentation at the office of the receiver, 61 Broadway, New York.

UNION PACIFIC.—This company has asked an injunction from the United States district court, Kansas City, against the members of the Public Service Commission of Missouri to prevent their interfering with the issuance of \$2,000,000 bonds and from attempting to impose penalties for not submitting the proposal to issue the bonds to the Missouri Public Service Commission for approval.

VICKSBURG, SHREVEPORT & PACIFIC.—An annual dividend of 5 per cent has been declared on the outstanding \$2,142,800 preferred stock. Nothing was paid on this stock in 1915, and 5 per cent was paid in 1914.

RECORD IN GERMAN FREIGHT.—In the period beginning with December of last year, the freight receipts of the German State railroads have surpassed those of any previous time. In the second year of the war (1915) freight receipts were \$534,759,000, compared with \$443,766,600 in the first year of the war (1914), and \$530,233,200 in the last year of peace (1913).

RAILWAY RETURNS IN NEW SOUTH WALES.—The official report of the New South Wales Railways and Tramways Commission shows a deficit for the year ended June 30, 1916, of \$668,934. The deficit of the railways was \$1,088,874, while the tramways made a profit of \$419,940. In 1914-15 the profit for the combined services amounted to \$325,102. The total earnings of the tram lines for the year ended June 30, 1916, were \$5,799,057. During that year 292,021,774 passengers were carried on the tram lines, as compared with 289,282,845 in 1914-15; the steam railways carried 92,850,838 passengers, against 88,774,451. No passengers were fatally injured by accident to trains.